

Index to NASA Tech Briefs

FACILITY FORM 602

N65 15153

(ACCESSION NUMBER)

54

(PAGES)

(THRU)

1

(CODE)

34

(CATEGORY)

(NASA CR OR TMX OR AD NUMBER)

GPO PRICE \$

OTS PRICE(S) \$ 3.00

Hard copy (HC)

Microfiche (MF) .50

Issue Number 1



January 1965

National Aeronautics and Space Administration

Introduction

15153

15153

This *Index to NASA Tech Briefs* has been prepared as a guide to technological innovations derived from the NASA space program. The publication is arranged in two major sections: the first contains a listing of the citations and abstracts of all NASA Tech Briefs published to date, arranged by subject category for ease of scanning; the second comprises three indexes: Subject Index, Originator/Tech Brief Number Index and Tech Brief/Ori~~g~~inator Number Index. Each Tech Brief citation is prefixed by a Tech Brief number. The separate indexes contain explanatory notes which guide the user to the desired Tech Brief. *author*

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TABLE OF CONTENTS

Category 01	Electrical (Electronic)	1
Category 02	Energy sources	7
Category 03	Materials (Chemistry)	7
Category 04	Life Sciences.	10
Category 05	Mechanical	10
Subject Index.		I-1
Originator/Tech Brief Number Index		I-33
Tech Brief/Originator Number Index		I-35

01 ELECTRICAL (ELECTRONIC)

B63-10006 SETTING OF ANGLES ON MACHINE TOOLS SPEEDED BY MAGNETIC PROTRACTOR
VALE, L. B. MAY 1964
ARC-5

AN ADJUSTABLE PROTRACTOR FACILITATES TRANSFERENCE OF ANGLES TO REMOTE MACHINE TOOLS. IT HAS A MAGNETIC BASE INCORPORATING A BEAM WHICH CAN BE ADJUSTED UNTIL ITS SHADOW COINCIDES WITH AN IMAGE ON THE SCREEN OF A PROJECTOR.

B63-10024 SOLENOID PERMITS REMOTE CONTROL OF STOP WATCH AND ASSURES RESTARTING
KODAI, C. JUN. 1964
FRC-17

A STOP WATCH WHICH MAY BE REMOTELY CONTROLLED BY THE USE OF A SOLENOID MECHANISM IS DESCRIBED. WHEN THE SOLENOID IS ENERGIZED THE COIL SPRING PULLS THE LEVER ARM AND STARTS THE BALANCE WHEEL, WHEN IT IS NOT ENERGIZED THE SPRING PULLS THE LEVER AND STOPS THE WATCH.

B63-10027 INCREASED PERFORMANCE RELIABILITY OBTAINED WITH DUAL /REDUNDANT/ OSCILLATOR SYSTEM
NOLIS, W. M. /IBM/ MAR. 1964
GSFC-36

TWO CRYSTAL-CONTROLLED OSCILLATORS, EACH WITH AN ASSOCIATED BUFFER STAGE, PROVIDES AN OUTPUT AT A COMMON POINT. THE CIRCUIT DESIGN GIVES HIGH RELIABILITY CONTROL OF OUTPUT FREQUENCY AND AMPLITUDE.

B63-10033 INDIUM FOIL WITH BERYLLIA WASHER IMPROVES TRANSISTOR HEAT DISSIPATION
HILLIARD, J. JOHN, J. E. A. APR. 1964 /SEE NASA-TN-D-1753/
GSFC-42

INDIUM FOIL, USED AS AN INTERFACE MATERIAL IN TRANSISTOR MOUNTINGS, GREATLY REDUCES THE THERMAL RESISTANCE OF BERYLLIA WASHERS. THIS METHOD IMPROVES THE HEAT DISSIPATION OF POWER TRANSISTORS IN A VACUUM ENVIRONMENT.

B63-10091 MODIFIED FILTER PREVENTS CONDUCTION OF MICRO-WAVE SIGNALS ALONG HIGH-VOLTAGE POWER SUPPLY LEADS
MATHISON, R. P. MAY 1964
JPL-63

VERY LOSSY POWDERED IRON MATERIAL, IN THE LINING OF A POLYESTER RESIN, REPLACES THE DIELECTRIC MATERIAL IN THE SHORT COAXIAL TRANSMISSION LINE OF A SIMPLE FILTER. THE LOSSY MATERIAL ABSORBS MICROWAVE SIGNALS ALONG HIGH VOLTAGE POWER SUPPLY LEADS.

B63-10118 STEPPING SWITCH WITH SIMPLE ACTUATOR PROVIDES MANY CONTACTS IN SMALL SPACE
MILLER, J. V. MAY 1964
JPL-122

TO REDUCE THE SPACE REQUIRED FOR A STEPPING SWITCH WITH MANY CONTACTS, A SIMPLE ELECTROMECHANICAL ACTUATOR WITH A MAXIMUM NUMBER OF WIPERS HAS BEEN INCORPORATED INTO A COMPACT ASSEMBLY. THIS SMALL SIZED UNIT IS INEXPENSIVE TO FABRICATE.

B63-10174 MODULAR CHASSIS SIMPLIFIES PACKAGING AND INTERCONNECTING OF CIRCUIT BOARDS
ARENS, W. E. BOLINE, K. G. MAY 1964
JPL-236A

A SYSTEM OF MODULAR CHASSIS STRUCTURES HAS

SIMPLIFIED THE DESIGN FOR MOUNTING A NUMBER OF PRINTED CIRCUIT BOARDS. THIS DESIGN IS STRUCTURALLY ADAPTABLE TO COMPUTER AND INDUSTRIAL CONTROL SYSTEM APPLICATIONS.

B63-10193 REMOVABLE PREHEATER ELEMENTS IMPROVE OXIDE INDUCTION FURNACE
LEIPOLD, M. H. JAN. 1964
JPL-288

HEAT AND CORROSION RESISTANT PREHEATER ELEMENTS ARE USED IN OXIDE INDUCTION FURNACES TO RAISE THE TEMPERATURE TO THE LEVEL FOR CONDUCTING ELECTRICITY. THESE PREHEATER ELEMENTS ARE THEN REMOVED AND THE INDUCTION COIL ENERGIZED.

B63-10227 ELECTROMECHANICALLY OPERATED CAMERA SHUTTER PROVIDES UNIFORM EXPOSURE
FORD, A. G. MAR. 1964
JPL-357

A UNIDIRECTIONAL CAMERA SHUTTER EMPLOYING A SOLENOID AND MECHANICAL LINKAGES PERMITS UNIFORM EXPOSURE AND MINIMIZES DISTORTION OF THE IMAGE FORMED IN THE CAMERA.

B63-10229 FLANGE ON MICROWAVE ANTENNA SUBREFLECTOR CUTS GROUND NOISE
POTTER, P. D. MAY 1964
JPL-362

THE SUBREFLECTOR OF A MICROWAVE ANTENNA HAS BEEN REDESIGNED SO THAT ITS OUTER EDGE HAS A CONICAL FLANGE. THIS REDUCES NOISE BY CAUSING GROUND ENERGY RADIATION TO CANCEL OUT BEFORE ENTERING THE ANTENNA.

B63-10238 SHAPED SUPERCONDUCTOR CYLINDER RETAINS INTENSE MAGNETIC FIELD
HILDEBRANDT, A. F. WAHLQUIST, H. MAY 1964
JPL-381

THE CURVE OF THE INNER WALLS OF A SUPERCONDUCTING CYLINDER IS PLOTTED FROM THE FLUX LINES OF THE MAGNETIC FIELD TO BE CONTAINED. THIS SHAPING REDUCES MAXIMUM FLUX DENSITIES AND PERMITS A STRONGER AND MORE UNIFORM MAGNETIC FIELD.

B63-10250 LEVEL OF SUPER-COLD LIQUIDS AUTOMATICALLY MAINTAINED BY LEVELOMETER
TENER, W. M. MAR. 1964
JPL-397

A LEVELOMETER SYSTEM, IN WHICH THE LEVEL OF CRYOGENIC LIQUID TO BE CONTROLLED AFFECTS THE LEVEL OF AN ELECTROLYTE, AUTOMATICALLY SWITCHES A PUMP ON AND OFF. A PRESSURE-SENSITIVE DIAPHRAGM CAN ALSO THROW A MICROSWITCH TO START OR STOP THE PUMP.

B63-10255 TRANSFLUXOR CIRCUIT AMPLIFIES SENSING CURRENT FOR COMPUTER MEMORIES
MILLIGAN, G. C. MAR. 1964
JPL-406

TO TRANSFER DATA FROM THE MAGNETIC MEMORY CORE TO AN INDEPENDENT CORE, A RELIABLE SENSING AMPLIFIER HAS BEEN DEVELOPED. LATER THE DATA IN THE INDEPENDENT CORE IS TRANSFERRED TO THE ARITHMETICAL SECTION OF THE COMPUTER.

B63-10258 DOUBLE-THROW MICROWAVE DEVICE SWITCHES TWO LINES QUICKLY
CLAUSS, R. STELZRIED, C. T. FEB. 1964
JPL-410

BY COMBINING A SINGLE-THROW MICROWAVE SWITCH WITH A MICROWAVE CIRCULATOR IN A CIRCUIT, TWO INPUT LINES CAN BE SWITCHED QUICKLY. THERE IS ONLY A BRIEF TRANSITION TIME WHEN BOTH /OR NEITHER/ OF THE TWO LINES ARE CONNECTED TO AN OUTPUT LINE.

B63-10262 IGNITING SYSTEM FOR MERCURY VAPOR LAMPS PROTECTS TRANSISTORIZED SUSTAINING SUPPLY
GUISINGER, J. E. JUL. 1964
JPL-421

A CURRENT FROM A SUSTAINING POWER SUPPLY FLOWS THROUGH THE MERCURY VAPOR LAMP AND, AS THERE ARE NO RESISTORS IN SERIES WITH THIS SUPPLY, THE POWER IS EFFICIENTLY USED. THIS HIGH VOLTAGE IGNITING DEVICE PROTECTS THE TRANSISTORIZED HIGH CURRENT, LOW VOLTAGE POWER SUPPLY.

B63-10264 NOVEL HORN ANTENNA REDUCES SIDE LOBES, IMPROVES RADIATION PATTERN
POTTER, P. D. APR. 1964
JPL-425

A HORN ANTENNA, COMBINING TWO PROPAGATION MODES AT SELECTED POWER RATIOS, REDUCES SIDE LOBES, AND IMPROVES THE RADIATION CHARACTERISTICS. NOISE AND UNWANTED SIGNALS ARE CONSIDERABLY SUPPRESSED.

B63-10280 METER ACCURATELY MEASURES FLOW OF LOW-CONDUCTIVITY FLUIDS
LOVE, E. G. MAY 1964
JPL-0021

AN ELECTROMAGNETIC FLOWMETER HAS BEEN ADJUSTED TO MINIMIZE THE ERRORS INHERENT IN MEASURING THE FLOW OF LOW CONDUCTIVITY FLUIDS. THIS IS DONE THROUGH USE OF A DIRECT-COUPLED, DIFFERENTIAL CATHODE-FOLLOWER, WHOSE GRID POTENTIAL IS ADJUSTABLE WITH RESPECT TO GROUND LEVELS.

B63-10284 SMALL DIGITAL RECORDING HEAD HAS PARALLEL BIT CHANNELS, MINIMIZES CROSS TALK
ELLER, E. E. LAUE, E. G. MAY 1964
JPL-0029

A SMALL DIGITAL RECORDING HEAD CONSISTS OF CLOSELY SPACED PARALLEL WIRES, IMBEDDED IN A FERRITE BLOCK TO CONCENTRATE THE MAGNETIC FLUX. PARALLEL-RECORDED INFORMATION BITS ARE CONVERTED INTO SERIAL BITS ON MOVING MAGNETIC TAPE AND CROSS TALK IS SUPPRESSED.

B63-10321 IMPROVED VARIABLE-RELUCTANCE TRANSDUCER MEASURES TRANSIENT PRESSURES
MORTON, R. W. PATTERSON, J. L. MAY 1964
LANGLEY-10

A FLUSH-DIAPHRAGM PICKUP AND A FEEDBACK-STABILIZED CARRIER AMPLIFIER ARE AMONG THE FEATURES INCORPORATED INTO AN IMPROVED VARIABLE-RELUCTANCE TRANSDUCER. THIS LOW-IMPEDANCE DEVICE RESPONDS TO STEADY-STATE AS WELL AS TRANSIENT PRESSURES.

B63-10338 OPTICS USED TO MEASURE TORQUE AT HIGH ROTATIONAL SPEEDS
KRSEK, A., JR. TIEFERMAN, M. DEC. 1964
LEWIS-13

IN MEASURING TORQUE TRANSMITTED BY A HIGH SPEED ROTATION SHAFT, AN APPARATUS HAS BEEN DEvised WHICH INCLUDES A SHAFT, AN OPTICAL SYSTEM AND READOUT SERVOMECHANISM. THIS HIGHLY ACCURATE METHOD USES ONLY OPTICAL CONTACT WITH MOVING PART AND IS STATICALLY CALIBRATED.

B63-10342 RADIANT HEATER FOR VACUUM FURNACES OFFERS HIGH STRUCTURAL RIGIDITY, LOW HEAT LOSS
VARY, A. MAY 1964
LEWIS-39

SOME PROBLEMS ASSOCIATED WITH HIGH TEMPERATURE HEATERS FOR VACUUM FURNACES HAVE BEEN ELIMINATED BY THE USE OF SHAPED FILAMENTS OF REFRACTORY METAL. THESE FILAMENTS, SUPPORTED IN CYLINDRICAL ARRAY BY CERAMIC SPACERS, OPERATE WITH HIGH VOLTAGE, LOW CURRENT POWER.

B63-10440 NEW APPARATUS INCREASES ION BEAM POWER DENSITY
BALDWIN, L. V. SANDBORN, V. A. JUN. 1964
LEWIS-73

TO INCREASE ION ENGINE OR ROCKET POWER, AN ION SOURCE AND EMITTER, AN ION BEAM FOCUSING ELECTRODE, AND AN ION ACCELERATOR ARE INCORPORATED INTO THE SYSTEM. IN OPERATION THE SPACE CHARGE SURROUNDING THE ION EMITTER DECREASES, THE ION BEAM DENSITY ACCELERATES, AND ENGINE POWER INCREASES.

B63-10443 IMPROVED SENSOR COUNTS MICROMETEOROID PENETRATIONS
DAVISON, E. H. MAY 1964
LEWIS-76

A SENSOR, CONSISTING OF A THIN DUAL-CAPACITOR ASSEMBLY WITH AN OUTER FILM OF THERMAL-CONTROL MATERIAL, IS USED TO DETECT MICROMETEOROID PARTICLES. A COINCIDENCE COUNTING CIRCUIT IS USED TO COUNT THE PENETRATIONS.

B63-10493 TWO-STAGE EMITTER FOLLOWER IS TEMPERATURE STABILIZED
SCHMIDT, M. H. /MCDONNELL AIRCRAFT CORP./ MAY 1964
MSC-20

TWO-STAGE TEMPERATURE STABILIZED CIRCUIT USING TWO TRANSISTORS IS DESCRIBED. INCREASE IN TEMPERATURE CAUSES THE BASE-TO-EMITTER VOLTAGE OF NPN TRANSISTOR TO BECOME LESS POSITIVE WHEREAS THE BASE-TO-EMITTER VOLTAGE OF PNP TRANSISTORS BECOMES LESS NEGATIVE SO THE TEMPERATURE-INDUCED VARIATION IN $V_{SUB 1}$ AND $V_{SUB 2}$ CANCEL OUT.

B63-10508 CIRCUIT SWITCHES LATCHING RELAY IN RESPONSE TO SIGNALS OF DIFFERENT POLARITY
SMITH, L. S. /ELECTRO-OPTICAL SYSTEMS, INC./ MAY 1964
WOO-055

A CIRCUIT USING ONE POWER SUPPLY AND TWO STORAGE CAPACITORS, WHICH MAY BE SEPARATELY DISCHARGED IN OPPOSITE DIRECTIONS THROUGH A RELAY IN RESPONSE TO CHANGE IN POLARITY OF A SIGNAL, IS DESCRIBED.

B63-10511 FREQUENCY-SHIFT-KEYER CIRCUIT IMPROVES PCM CONVERSION FOR RADIO TRANSMISSION
MIKSZAN, D. P. /WESTINGHOUSE ELEC. CORP./ JUN. 1964
GSFC-80

A DATA LOGIC CIRCUIT EMPLOYING A FIXED FREQUENCY, SQUARE-WAVE OSCILLATOR AND FLIP-FLOP GATES ALLOWS FOR THE SHIFTING FROM ONE FREQUENCY TO THE OTHER AT THE END OF A WHOLE NUMBER OF CYCLES OF ONE SHIFT FREQUENCY AND AT THE BEGINNING OF A CYCLE OF THE SECOND SHIFT FREQUENCY.

B63-10512 LOW-COST TAPE SYSTEM MEASURES VELOCITY OF ACCELERATION
HARTENSTEIN, R. JUN. 1964
GSFC-85

BY AFFIXING PERFORATED MAGNETIC RECORDING TAPE TO THE FALLING END OF A BODY, ACCELERATION AND VELOCITY WERE MEASURED. THE MEASUREMENT WAS MADE BY ALLOWING THE TAPE TO PASS BETWEEN A LIGHT SOURCE AND A PHOTOELECTRIC SENSOR. DATA WAS OBTAINED FROM A READOUT DEVICE.

B63-10514 COMPUTER CIRCUIT WILL FIT ON SINGLE SILICON CHIP
SMITH, C. JUN. 1964
JPL-513

A SIMPLIFIED COMPUTER LOGIC CIRCUIT OF TWO NAND/NOR GATES AND THREE ADDITIONAL INPUTS TO ACCOMPLISH THE COUNT AND SHIFT FUNCTION IS DESCRIBED. THE CIRCUIT HAS CAPACITY FOR PARALLEL

READ-IN, COUNTING, SERIAL SHIFTOUT, COMPLEMENT INPUT AND SET AND RESET.

B63-10529 CONNECTOR FOR THERMOCOUPLE LEADS SAVES COSTLY WIRE, MAKES RELIABLE CONNECTORS
MILLER, H. B. APR. 1964
LANGLEY-26

A CONNECTOR FOR USE IN THE THERMOCOUPLE CIRCUITS WHICH IS SILVER-BRAZED TO THE METAL THERMOCOUPLE SHEATH ON ONE END AND CRIMPED OVER THE INSULATION OF THE FLEXIBLE LEAD ON THE OTHER, ASSURES PROTECTION AGAINST BREAKAGE AND ABRASION. A MOISTURE-PROOF INSULATING MATERIAL IS USED TO ENCAPSULATE THE WIRE JUNCTIONS.

B63-10536 HOT-AIR SOLDERING TECHNIQUE PREVENTS OVERHEATING OF ELECTRICAL COMPONENTS
INNOVATOR NOT GIVEN /HUGHES AIRCRAFT CO./ FEB. 1964
GSFC-91

BY USING A HOT-AIR GUN WITH A SMALL ORIFICE, HEAT MAY BE LOCALIZED TO THE SOLDERING AREA OF THE CHASSIS. THE SOLDER IS PLACED AROUND THE CAPACITOR WHICH IS INSERTED IN THE MOUNTING HOLE SO THE RING IS IN CONTACT WITH THE CHASSIS.

B63-10537 SIMPLE CIRCUIT PROVIDES ADJUSTABLE VOLTAGE WITH LINEAR TEMPERATURE VARIATION
MOEDE, L. W. /DATAMETRICS CORP./ MAR. 1964
JPL-W00-029

A BRIDGE CIRCUIT GIVING AN ADJUSTABLE OUTPUT VOLTAGE THAT VARIES LINEARLY WITH TEMPERATURE IS FORMED WITH TEMPERATURE COMPENSATING DIODES IN ONE LEG. A RESISTOR VOLTAGE DIVIDER ADJUSTS TO TEMPERATURE RANGE ACROSS THE BRIDGE. THE CIRCUIT IS SATISFACTORY OVER THE TEMPERATURE RANGE OF -20 DEGREES CENTIGRADE TO 80 DEGREES CENTIGRADE.

B63-10551 UNMANNED SEISMOMETER LEVELS SELF, CORRECTS DRIFT ERRORS
SUTTON, G. /COLUMBIA U./ MAY 1964
GSFC-100

AN UNMANNED, SELF-LEVELING SEISMOMETER IS DEVELOPED WHICH CONTAINS THREE SUBSYSTEMS- A MECHANICAL, AN ELECTRONIC PICKOFF AND FEEDBACK, & A LEVELING AND VERTICAL CENTERING SUBSYSTEM. EARTH MOTIONS ARE DETECTED BY MEANS OF A SEISMIC MASS COUPLED TO A COIL-MAGNET ASSEMBLY AND A DIFFERENTIAL CAPACITOR PLATE ASSEMBLY.

B63-10553 TRANSISTORIZED TRIGGER CIRCUIT IS FREQUENCY-CONTROLLABLE
MOORE, E. T. /DUKE U./ JUN. 1964
GSFC-111

A TRIGGER CIRCUIT EMPLOYING TWO UNIJUNCTION TRANSISTOR OSCILLATORS, WHOSE FREQUENCY IS VARIED BY CHANGING THE BASE-TO-BASE VOLTAGE, PROVIDES VARIABLE ELECTRICAL CONTROL OF THE FREQUENCY.

B63-10554 HIGHLY EFFICIENT SQUARE-WAVE OSCILLATOR OPERATOR AT HIGH POWER LEVELS
HALL, J. E., JR. /DUKE U./ JUN. 1964
GSFC-112

A SQUARE-WAVE OSCILLATOR CIRCUIT CONTAINING ONLY SIMPLE RESISTOR-CAPACITOR COMBINATIONS AND TRANSISTORS OPERATES WITH HIGH EFFICIENCY AT RELATIVELY HIGH POWER LEVELS.

B63-10555 COMPUTER DETERMINES HIGH-FREQUENCY PHASE STABILITY
NICHOLS, G. B. JUL. 1964
GSFC-113

DETERMINATION OF PHASE STABILITY OF A HIGH FREQUENCY SIGNAL USING A COMPUTER IS ACCOMPLISHED BY A CIRCUIT USING TWO AUXILIARY OSCILLATORS,

MULTIPLIERS AND LOW-PASS FILTERS IN CROSS CORRELATION WITH THE OSCILLATOR PRODUCING THE SIGNAL OF INTEREST.

B63-10561 TINY SENSOR-TRANSMITTER CAN WITHSTAND EXTREME ACCELERATION, GIVES DIGITAL OUTPUT
MOSSINO, R. L. ROBINSON, G. NOV. 1964
ARC-22

A SELF-PULSING OSCILLATOR TRANSMITS A PULSED SIGNAL. THE TIME BETWEEN PULSES AND THE FREQUENCY ARE CONTROLLED BY TWO NETWORKS. VARIATIONS IN THE COMPONENT VALUES IN EACH OF THE TWO NETWORKS, DUE TO ENVIRONMENTAL CHANGES, APPEAR AS CHANGES IN FREQUENCY AND TIME BETWEEN PULSES IN THE TRANSMITTED SIGNAL. SUCH A SENSOR IS USED TO MEASURE PHYSICAL MAGNITUDES.

B63-10567 SIMPLE CIRCUIT CONTINUOUSLY MONITORS THERMOCOUPLE SENSOR
GREENWOOD, T. L. AUG. 1964
M-FS-61

A SERIES CIRCUIT WAS DEVELOPED TO CHECK THE CONTINUITY IN THERMOCOUPLE SENSORS. THIS METHOD MAY BE USED IN MONITORING CONTINUITY IN ANY DC VOLTAGE-OPERATED CONTROL CIRCUIT.

B63-10572 DEVICE CALIBRATES VIBRATION TRANSDUCERS AT AMPLITUDES UP TO 20G.
GREENWOOD, T. L. AUG. 1964
M-FS-86

A PIEZOELECTRIC TRANSDUCER PROVIDES ACCURATE CALIBRATION OF VIBRATION AMPLITUDES TO 20G. THE CALIBRATION SYSTEM USES AN ELECTROMAGNETICALLY DRIVEN RESONANT BEAM TO GENERATE MECHANICAL VIBRATIONS AT A FIXED FREQUENCY.

B63-10579 SMALL FOAMED POLYSTYRENE SHIELD PROTECTS LOW-FREQUENCY MICROPHONES FROM WIND NOISE
TEDRICK, R. N. MAY 1964
M-FS-123

A FOAMED POLYSTYRENE NOISE SHIELD FOR MICROPHONES HAS BEEN DESIGNED IN TEAR-DROP SHAPE TO MINIMIZE AIR TURBULENCE. THE SHIELD SLIPS ON AND OFF THE MICROPHONE HEAD EASILY AND IS VERY EFFECTIVE IN LOW-FREQUENCY SOUND INTENSITY MEASUREMENTS.

B63-10596 FRONT AND BACK PRINTED CIRCUIT LAYOUTS PRESENTED ON SINGLE SHEET
PERRY, J. OCT. 1964
GSFC-93

A DIAZO PHOTOGRAPHIC PROCESS OF CLEAR PLASTIC MASTERS IS USED IN REPRODUCING FRONT AND BACK PRINTED CIRCUIT LAYOUTS OF DIFFERING INTENSITY ON A SINGLE SHEET.

B63-10597 PRECISION GAGE MEASURES ULTRAHIGH VACUUM LEVELS
HUDSON, J. B. SEARS, G. W. /GEN. DYN. CORP./ JUN. 1964
GSFC-114

AN IONIZATION GAUGE IN WHICH INTERNALLY GENERATED X-RAYS ARE MINIMIZED IS DESCRIBED. THIS GAUGE PERMITS THE MEASUREMENT OF GAS PRESSURES IN ULTRAHIGH SYSTEMS OF MICRO-PICO TORR /10 -18/-

B63-10599 LIQUID SWITCH IS REMOTELY OPERATED BY LOW DC VOLTAGE
MOORE, E. T. MOORE E. T. /DUKE U./ MAY 1964
GSFC-119

A LIQUID SWITCH WHICH DOES NOT DEPEND ON ANY MECHANICAL, GRAVITATIONAL, OR INERTIAL ACTUATION IS DEVELOPED FOR USE IN SPACE ENVIRONMENTS. IT MAY BE REMOTELY OPERATED ON LOW DC VOLTAGE.

B63-10600 CIRCUIT CONTROLS TRANSIENTS IN SCR INVERTERS
MOORE, E. T. WILSON, T. G. /DUKE U./ JUN. 1964
GSFC-120

THE ELIMINATION OF STARTING DIFFICULTIES IN SCR INVERTERS IS ACCOMPLISHED BY THE ADDITION OF TWO TAPS OF THE OUTPUT WINDING OF THE INVERTER. ON STARTING OR UNDER TRANSIENT LOADS THE TWO ADDITIONAL TAPS DELIVER POWER THROUGH DIODES WITHOUT REQUIRING QUENCHING OF SCR CURRENTS IN EXCESS OF NORMAL STARTING LOAD.

B63-10603 MONOSTABLE CIRCUIT WITH TUNNEL DIODE HAS FAST RECOVERY
HEFFNER, P. MAY 1964
GSFC-132

A MONOSTABLE MULTIVIBRATOR CIRCUIT USING A TUNNEL DIODE MAKES IT POSSIBLE FOR THE MSMV TO EXCEED THE PERFORMANCE OF PRESENT MULTIVIBRATORS IN TWO RESPECTS. THE RISE TIME OF THE OUTPUT VOLTAGE IS FASTER AND THE DUTY CYCLE IS RAISED TO APPROXIMATELY 95 PERCENT.

B63-10606 NEW SINTERING PROCESS ADJUSTS MAGNETIC VALUE OF FERRITE CORES
VINAL, A. W. /IBM/ MAY 1964
GSFC-129

A TWO-PHASE SINTERING TECHNIQUE BASED ON TIME AND TEMPERATURE PERMITS REVERSIBLE CONTROL OF THE COERCIVE THRESHOLD OF SINTERED FERRITE CORES. THRESHOLD COERCIVITY MAY BE CONTROLLED OVER A SUBSTANTIAL RANGE OF VALUES BY SELECTIVE CONTROL OF THE COOLING RATE.

B63-10609 TEMPERATURE-SENSITIVE NETWORK DRIVES ASTABLE MULTIVIBRATOR
INNOVATOR NOT GIVEN /RCA/ OCT. 1964
GSFC-137

THE DEVELOPMENT OF A SIMPLE CIRCUIT USING TWO ZENER DIODES AND FIVE RESISTORS, WHICH PROVIDES A TEMPERATURE-SENSITIVE VOLTAGE TO DRIVE THE ASTABLE MULTIVIBRATOR, IS DESCRIBED.

B63-10613 CRYOGENIC WAVEGUIDE WINDOW IS SEALED WITH PLASTIC FOAM
CLAUSS, R. STELZRIED, C. T. JUN. 1964
JPL-559

WAVEGUIDE WINDOWS MADE WITH POLYSTYRENE PREFORMED PLASTIC AND SEALED WITH FOAMED-IN-PLACE PLASTIC ARE USEFUL IN ANY MICROWAVE WAVEGUIDE SYSTEM USING CRYOGENIC COOLING.

B64-10002 CIRCUIT RELIABILITY BOOSTED BY SOLDERING PINS OF DISCONNECT PLUGS TO SOCKETS
PIERCE, W. B. MAR. 1964
JPL-447

WHERE DISCONNECT PINS MUST BE USED FOR WIRING AND TESTING A CIRCUIT, IMPROVED SYSTEM RELIABILITY IS OBTAINED BY MAKING A PERMANENT JOINT BETWEEN PINS AND SOCKETS OF THE DISCONNECT PLUG. AFTER THE CIRCUIT HAS BEEN TESTED, CONTACT POINTS MAY BE FUSED THROUGH SOLDERING, BRAZING, OR WELDING.

B64-10004 ULTRA-SENSITIVE TRANSDUCER ADVANCES MICRO-MEASUREMENT RANGE
ROGALLO, V. L. MAY 1964
ARC-26

AN ULTRASENSITIVE PIEZOELECTRIC TRANSDUCER, THAT CONVERTS MINUTE MECHANICAL FORCES INTO ELECTRICAL IMPULSES, MEASURES THE IMPACT OF MICROMETEORIODS AGAINST SPACE VEHICLES. IT HAS UNIFORM SENSITIVITY OVER THE ENTIRE TARGET AREA AND A HIGH DEGREE OF STABILITY.

B64-10007 LOW-POWER TRANSISTORIZED CIRCUIT PROVIDES STAIRCASE WAVEFORM

BREEN, G. D. JUL. 1964
GSFC-48

A LOW INPUT POWER TRANSISTORIZED CIRCUIT IS USED TO GENERATE A STAIRCASE WAVEFORM OF HIGH STEP UNIFORMITY. OTHER CHARACTERISTICS ARE LOW STEP DROOP, FAST TRANSITION TIME, AND NO FEEDBACK.

B64-10010 MODIFIED RF COAXIAL CONNECTOR ENDS VACUUM CHAMBER WIRING PROBLEM
WEINER, D. MAY 1964
GSFC-150

A STANDARD RADIO FREQUENCY COAXIAL CONNECTOR IS MODIFIED SO THAT A PLASTIC INSULATING SLEEVE CAN BE MOUNTED IN THE WALL OF A VACUUM CHAMBER. THIS ELIMINATES GROUND LOOPS AND INTERFERENCE FROM CABLE CONNECTIONS.

B64-10016 COMPACT COAXIAL CONNECTOR FOR PRINTED CIRCUIT ADDS RELIABILITY
RADECKE, T. F. MAY 1964
MSC-57

SOLDERING AND WELDING TECHNIQUES ARE USED TO CONNECT A COAXIAL CABLE TO A PRINTED CIRCUIT BOARD. THIS DEVICE AIDS RELIABILITY CONTROL OF EQUIPMENT AS STANDARD CONNECTORS ARE BULKY AND HEAVY.

B64-10017 BLOCKING OSCILLATOR USES LOW TRIGGERING VOLTAGE
INNOVATOR NOT GIVEN /WESTINGHOUSE ELEC. CORP./ DEC. 1964
MSC-58

TO PREVENT PREMATURE TRIGGERING OF A BLOCKING OSCILLATOR, A SMALLER MAGNETIC CORE IS ADDED TO THE CONVENTIONAL OSCILLATOR CIRCUIT. THIS SERVES AS A SECOND BLOCKING OSCILLATOR AND HAS A LOWER TRIGGERING THRESHOLD.

B64-10019 NEW METHOD USED TO FABRICATE GALLIUM ARSENIDE PHOTOVOLTAIC DEVICE
ELLIS, S. G. /RCA/ JUN. 1964
WOO-062

A NEW METHOD FOR FABRICATING PHOTOCELLS, OR SOLAR CELLS, SUBSTITUTES COPPER IODIDE FOR ZINC DIFFUSION. THIS PRODUCES A P-TYPE SURFACE LAYER AND A PHOTOVOLTAIC JUNCTION.

B64-10024 EFFICIENT CIRCUIT TRIGGERS HIGH-CURRENT, HIGH-VOLTAGE PULSES
GREEN, E. D. /WESTINGHOUSE ELEC. CORP./ JUN. 1964
MSC-14

A MODIFIED CIRCUIT USES DIODES TO EFFECTIVELY DISCONNECT THE CHARGING RESISTORS FROM THE CIRCUIT DURING THE DISCHARGE CYCLE. RESULT IS AN EFFICIENT PARALLEL CHARGING, HIGH VOLTAGE PULSE MODULATOR WITH LOW VOLTAGE RATING OF COMPONENTS.

B64-10042 OHMMETER SENSES DEPLETION OF LUBRICANT IN JOURNAL BEARINGS
ROSS, A. O. DEC. 1964
LEWIS-37

AN OHMMETER IS USED AS A SENSOR TO DETERMINE WHEN THE LUBRICATING OIL IN A HIGH SPEED JOURNAL BEARING BECOMES DEPLETED.

B64-10064 DIGITAL LOGIC ELEMENTS PROVIDE ADDITIONAL FUNCTIONS FROM ANALOG INPUT
MATTY, T. C. /MCDONNELL AIRCRAFT CORP./ JUN. 1964
MSC-64

A D.C. ANALOG INPUT CAN BE USED TO PRODUCE AN INTEGRATOR WITH HIGH DYNAMIC RANGE OR A POSITION SERVO WITH INHERENT STABILITY. THIS IS

DONE BY A SWITCHING SYSTEM USING DIGITAL-TO-ANALOG CONVERTERS AND AN ELECTRONIC SWITCH TO OBTAIN THE DESIRED OUTPUTS.

B64-10065 CONTINUITY TESTER SCREENS OUT FAULTY SOCKET CONNECTIONS
GOLDING, G. MAY 1964
JPL-596

A DEVICE, USED BEFORE AND AFTER ASSEMBLY, TESTS THE CONTINUITY OF AN ELECTRICAL CIRCUIT THROUGH EACH PIN AND SOCKET OF MULTIPLE CONNECTOR SOCKETS. ELECTRICALLY INSULATED EXCEPT AT THE CONTACT AREA, A TEST PROBE IS DIMENSIONED TO MAKE CONTACT ONLY IN PROPERLY FORMED SOCKETS.

B64-10080 IMPROVED INSERTION-LOSS TESTER
FINNIE, C. J. SCHUSTER, D. JUN. 1964
JPL-358

AN IMPROVED TEST METHOD ACCURATELY MEASURES THE INSERTION LOSS OF RF COMPONENTS WHILE AVOIDING AMPLIFIER DRIFT. CURRENTS ARE BALANCED ACROSS A BRIDGE TRANSFORMER WITH SHORTED PROBES AND THEN WITH EACH COMPONENT TO BE TESTED DIFFERENCES IN ADJUSTMENTS INDICATE THE LOSS.

B64-10109 ANALOG DEVICE SIMULATES PHYSIOLOGICAL WAVEFORMS
HICKMAN, D. M. NOV. 1964
MSC-51

AN ANALOG PHYSIOLOGICAL SIMULATOR GENERATES REPRESENTATIVE WAVEFORMS FOR A WIDE RANGE OF PHYSIOLOGICAL CONDITIONS. DIRECT COMPARISON OF THESE WAVEFORMS WITH THOSE FROM TELEMETRIC INPUTS PERMITS QUICK DETECTION OF SIGNAL PARAMETER DEGRADATION.

B64-10114 AUXILIARY SILVER ELECTRODE ELIMINATES TWO-STEP VOLTAGE DISCHARGE CHARACTERISTIC OF SILVER-ZINC CELLS
CHREITZBERG, A. M. /ELEC. STORAGE BATTERY CO./ JUN. 1964
GSFC-169

IN SILVER ZINC CELLS, AN AUXILIARY SILVER ELECTRODE IS ELECTRICALLY CONNECTED TO THE POSITIVE TERMINAL ONLY DURING DISCHARGE. THIS ELIMINATES THE TWO-STEP DISCHARGE CHARACTERISTIC OF SUCH CELLS.

B64-10118 USE OF PHOTOGRAPHS SPEEDS INSPECTION OF PRINTED-CIRCUIT BOARDS
STARK, E. /IBM/ JUL. 1964
MSC-72

THE PROJECTED IMAGES OF A PRINTED CIRCUIT BOARD AND THE ENGINEERING DRAWING IS SUPERIMPOSED ON A SCREEN FOR VISUAL COMPARISON. THIS TECHNIQUE SPEEDS INSPECTION, REDUCES THE INCIDENCE OF ERROR.

B64-10122 SIMPLE TRANSDUCER MEASURES LOW HEAT-TRANSFER RATES
LAUMANN, E. A. OCT. 1964
JPL-466

A SIMPLE TRANSDUCER IS USED TO MEASURE LOW RATES OF CONVECTIVE AND CONDUCTIVE HEAT TRANSFER FROM A FLUID TO A COOLED SURFACE UNDER STEADY-STATE CONDITIONS. TEMPERATURE DROP IS MEASURED BY TWO THERMOCOUPLES IMBEDDED IN A ROD OF LOW THERMAL CONDUCTIVITY.

B64-10143 FIELD-EFFECT TRANSISTOR IMPROVES ELECTROMETER AMPLIFIER
MUNOZ, R. NOV. 1964
ARC-36

AN ELECTROMETER AMPLIFIER USES A FIELD EFFECT TRANSISTOR TO MEASURE CURRENTS OF LOW AMPERAGE.

THE CIRCUIT, DEVELOPED AS AN AC AMPLIFIER, IS USED WITH AN EXTERNAL FILTER WHICH LIMITS BANDWIDTH TO ACHIEVE OPTIMUM NOISE PERFORMANCE.

B64-10144 RING COUNTER MAY BE ADVANCED OR RETARDED BY COMMAND SIGNAL
LIBBY, J. N. MOORE, H. D. JUL. 1964
GSFC-101

A POWER LOGIC CIRCUIT, WITH BIDIRECTIONAL CAPABILITY, IS USED TO DRIVE SMALL LOADS IN PLANNED SEQUENCE. THIS IS DESIGNED IN THE FORM OF A SHIFT REGISTER, WITH A REVERSIBLE RING COUNTER.

B64-10150 NOVEL CIRCUIT COMBINES PULSE STRETCHER WITH NOR GATE
CLIFF, R. A. OCT. 1964
GSFC-187

A PULSE-STRETCHING CIRCUIT ADDED TO A CONVENTIONAL NOR GATE CIRCUIT DETECTS A PRESELECTED STATE AND PRODUCES A PULSE THAT THE PULSE STRETCHER MAINTAINS FOR A LONG ENOUGH PERIOD TO RESET ALL COUNTER STAGES.

B64-10158 EMISSION TESTER FOR HIGH-POWER VACUUM TUBES
LUNDY, C. OCT. 1964
JPL-628

A SIMPLE EMISSION-TESTING CIRCUIT FOR HIGH POWER VACUUM TUBES TO CHECK THEIR OUTPUT STABILITY IS DESCRIBED. WITH MODIFICATION IT MAY BE USEFUL IN TESTING MERCURY-ARC RECTIFIERS.

B64-10163 FIELD EFFECT TRANSISTORS USED AS VOLTAGE-CONTROLLED RESISTORS
NOV. 1964
M-FS-174

TWO NEW METHODS OF INCORPORATING FIELD EFFECT TRANSISTORS INTO CIRCUIT DESIGNS HAS RESULTED IN LINEAR RESPONSE OF THIS TYPE TRANSISTOR OVER A WIDE RANGE OF CONTROLLED VOLTAGE LEVELS. THIS INCREASES ITS USEFULNESS AS A VOLTAGE-CONTROLLED RESISTOR.

B64-10171 SUBMINIATURE BIOTELEMETRY UNIT PERMITS REMOTE PHYSIOLOGICAL INVESTIGATIONS
OCT. 1964
ARC-39

A SUBMINIATURE BIOTELEMETRY TRANSMITTER PERMITS THE MEASUREMENT OF BIOPOTENTIAL RESPONSE IN HUMANS OR ANIMALS TO CONTROLLED ENVIRONMENTAL STIMULI WITHOUT DISCOMFORT WHILE ENGAGED IN NORMAL ACTIVITIES.

B64-10173 HIGH-PASS RF COAXIAL FILTER REJECTS DC AND LOW FREQUENCY SIGNALS
BAILEY, J. W. MC AFEE, D. F. OCT. 1964
GSFC-73

A LOW-LOSS RF FILTER ELEMENT FOR COAXIAL TRANSMISSION PROVIDES DC ISOLATION AND ELIMINATES LOW FREQUENCY SIGNALS. THE CHARACTERISTIC IMPEDANCE OF THE TRANSMISSION LINE IS NOT AFFECTED, AS THE DESIGN PERMITS DIRECT CONNECTION OF THE FILTER TO THE LINE.

B64-10200 BINARY SYSTEM GENERATES SIDEREAL RATE FROM STANDARD SOLAR RATE
GRANATA, R. MC CAUL, P. OCT. 1964
GSFC-190

A SIDEREAL RATE OUTPUT FROM MEAN SOLAR RATE INPUT IS DERIVED FROM A SIDEREAL GENERATOR THAT USES DIGITAL DIVISION AND MULTIPLICATION TECHNIQUES.

01-01 ELECTRICAL (ELECTRONIC)

B64-10209 RASTER LINEARITY OF VIDEO CAMERAS CALIBRATED WITH PRECISION TESTER
INNOVATOR NOT GIVEN /RCA/ DEC. 1964
GSFC-200

THE TIME BETWEEN TRANSITIONS IN A CAMERAS VIDEO OUTPUT IS MEASURED WHEN REGISTERED AT RETICLE MARKS ON THE VIDICON FACEPLATE. THIS DEVICE PERMITS PRECISION CALIBRATION OF RASTER LINEARITY OF TELEVISION CAMERA TUBES.

B64-10222 COMPACT CARTRIDGE DRIVES CODED TAPE AT CONSTANT READOUT SPEED
AUSTIN, D. C. OCT. 1964
JPL-472

TO FACILITATE STORAGE AND REPETITIVE READING OF SHORT-PROGRAM CODED TAPE, A CARTRIDGE CASE, CONTAINING MECHANICAL DRIVE AND READOUT ASSEMBLIES, HAS BEEN FABRICATED. THE DRIVE TRANSPORTS THE TAPE PAST A CONVENTIONAL PICKUP DEVICE DURING THE READING FUNCTION.

B64-10226 TEMPERATURE-COMPENSATION CIRCUIT STABILIZES PERFORMANCE OF VIDICONS
NOV. 1964
JPL-486

A SIMPLE TRANSISTOR CIRCUIT USES A THERMISTOR TO CHANGE THE VIDICON TARGET POTENTIAL IN RELATION TO TEMPERATURE DIFFERENCES.

B64-10237 APPARATUS MEASURES CONCENTRATION OF SUSPENDED DROPLETS IN GAS STREAMS
BOOTH, F. W. DEC. 1964
LANGLEY-31

AN APPARATUS, OPERATING ON THE PRINCIPLE OF WET- AND DRY-BULB THERMOMETRY, PERMITS INTERMITTENT OR CONTINUOUS MEASUREMENT OF THE CONCENTRATION OF DROPLETS DISPERSED IN A GAS STREAM OVER A WIDE RANGE OF GAS PRESSURE.

B64-10255 ELECTRONIC DEVICE SIMULATES RESPIRATION RATE AND DEPTH
THOMAS, J. A. NOV. 1964
MSC-89

AN OSCILLATOR CIRCUIT AND A THERMISTOR, IN CLOSE PROXIMITY TO A LIGHT BULB, PERIODICALLY VARIES THE HEAT OUTPUT OF THE BULB BY VARYING THE VOLTAGE ACROSS ITS FILAMENT. USE OF THIS SIMULATOR PERMITS CHECKOUT TESTS ON PNEUMOGRAPHS.

B64-10258 DIGITAL CARDIOMETER COMPUTES AND DISPLAYS HEARTBEAT RATE
MITCHELL, V. M. NOV. 1964
MSC-93

TO COMPUTE THE HEARTBEAT RATE FROM THE WAVEFORM OUTPUT OF AN ELECTROCARDIOGRAM, A DIGITAL CARDIOMETER WITH SOLID STATE CIRCUIT ELEMENTS HAS BEEN DEVELOPED. THIS COMPUTES THE BEAT EVERY 15 SECONDS AND VISUALLY PRESENTS THE DATA ON NUMERICAL DISPLAY TUBES.

B64-10259 PNEUMOTACHOMETER COUNTS RESPIRATION RATE OF HUMAN SUBJECT
GRAHAM, O. NOV. 1964
MSC-92

TO MONITOR BREATHS PER MINUTE, TWO RATE-TO-ANALOG CONVERTERS ARE ALTERNATELY USED TO READ AND COUNT THE RESPIRATORY RATE FROM AN IMPEDANCE PNEUMOGRAPH OVER FIXED INTERVALS. THE CONVERTER OUTPUTS ARE SEQUENTIALLY DISPLAYED NUMERICALLY ON ELECTROLUMINESCENT MATRICES.

B64-10271 IMPROVED TECHNIQUE FOR LOCALIZING ELECTRO-POLISHING FEATURES NOVEL NOZZLES
INNOVATOR NOT GIVEN /GEN. DYN./ASTRONAUTICS/ NOV. 1964

WOO-101

IMPINGEMENT ELECTROPOLISHING IS ACCOMPLISHED BY USE OF AN ELECTROLYTE FILM, WHICH IS EVENLY DISTRIBUTED BY AN INSULATED NOZZLE DESIGNED TO MATCH THE CONTOUR OF THE WORKPIECE TO BE TREATED. THE WORKPIECE IS CONNECTED TO THE POSITIVE TERMINAL OF A GENERATOR AND THE NOZZLE TO THE NEGATIVE TERMINAL.

B64-10280 SERVO SYSTEM FACILITATES PHOTOELASTIC STRAIN MEASUREMENTS ON RESINS
OTTS, J. W. NOV. 1964
JPL-504

TO FACILITATE PHOTOELASTIC MEASUREMENTS OF THE STRAINS DEVELOPED BY STRESSES APPLIED TO BIREFRINGENT RESINS, A SERVOMECHANISM IS EMPLOYED.

B64-10281 PTC THERMISTOR PROTECTS MULTILOADED POWER SUPPLIES
LEVERONE, H. MANDELL, N. NOV. 1964
GSFC-236

A PTC /POSITIVE-TEMPERATURE-COEFFICIENT/ THERMISTOR PLACED IN SERIES WITH EACH BRANCH LOAD OF A MULTILoad CIRCUIT PREVENTS POWER LOSS IN PARALLEL BRANCHES. THIS THERMISTOR MAY BE USED IN ANY CIRCUIT REQUIRING CURRENT LIMITING OR INTENDED OVERLOAD RESETTING.

B64-10283 MOUNTING FOR DIODES PROVIDES EFFICIENT HEAT SINK
INNOVATOR NOT GIVEN /RCA/ NOV. 1964
M-FS-197

EFFICIENT HEAT SINK IS PROVIDED BY SOLDERING DIODES TO METAL SUPPORT BARS WHICH ARE BRAZED TO A CERAMIC BASE. ELECTRICAL CONNECTIONS BETWEEN DIODES ON ADJACENT BARS ARE MADE FLEXIBLE BY METAL STRIPS WHICH AID IN HEAT DISSIPATION.

B64-10299 RADIATION DETECTOR-OPTICAL HANGING DEVICE IS OF SIMPLIFIED CONSTRUCTION
INNOVATOR NOT GIVEN /WESTINGHOUSE ELEC. CORP./ JAN. 1965
GSFC-251

A SIMPLIFIED RADIATION DETECTOR WAS DESIGNED WHICH EMPLOYS AN ACTIVATED CONTINUOUS FRONT SURFACE CONSISTING OF EITHER THE DIFFUSED OR BARRIER TYPE OF SEMICONDUCTING MATERIAL WITH A GRID STRUCTURE ON THE NONACTIVATED SIDE OF THE DETECTOR. ITS FORM MAY BE EITHER A RECTANGULAR COORDINATE OR A POLAR COORDINATE SYSTEM.

B64-10305 TRANSISTORIZED CONVERTER PROVIDES NONDISSIPATIVE REGULATION
INNOVATOR NOT GIVEN /DUKE U./ DEC. 1964
GSFC-238

A TRANSISTORIZED REGULATOR CONVERTER EFFICIENTLY CONVERTS FLUCTUATING INPUT VOLTAGES TO A CONSTANT OUTPUT VOLTAGE, AVOIDING THE USE OF SATURABLE REACTORS. IT IS NONDISSIPATIVE IN OPERATION AND FUNCTIONS IN AN OPEN LOOP THROUGH VARIABLE DUTY CYCLES.

B64-10309 WELDING PROCEDURE IMPROVES QUALITY OF WELDS, OFFERS OTHER ADVANTAGES
DEC. 1964
M-FS-32

AN IMPROVED PROCEDURE FOR ARC SPOT WELDING USES THE SIGMA /SUBMERGED INERT GAS METALLIC ARC/ METHOD. THIS HAS RESULTED IN WELDS OF HIGHER QUALITY THAN ARE OBTAINABLE BY CONVENTIONAL MEANS.

B64-10320 VOLTAGE GENERATOR SWEEPS OSCILLATOR FREQUENCY LINEARLY WITH TIME
INNOVATOR NOT GIVEN /MELPAR, INC./ JAN. 1965

M-FS-219

A VOLTAGE-TUNED OSCILLATOR CIRCUIT IS DESCRIBED WHICH SWEEPS THE OUTPUT SIGNAL FREQUENCY LINEARLY EXPONENTIALLY VARYING WITH TIME.

B64-10330 ECONOMICAL FABRICATION PROCESS PRODUCES HIGH-QUALITY JUNCTION TRANSISTORS
INNOVATOR NOT GIVEN /IBM/ DEC. 1964
JPL-SC-065

A CONVENIENT, THREE-STEP FABRICATION PROCESS, USING A P-TYPE LAYER OF GALLIUM ARSENIDE VAPOR-DEPOSITED ON A STARTING WAFER OF GERMANIUM, IS USED TO PRODUCE HETEROJUNCTION-HOMOJUNCTION PNP TRANSISTORS. THESE ARE OF HIGH QUALITY WITH GOOD INJECTION EFFICIENCY AND LOW CAPACITANCE.

B64-10349 BANDWIDTH SWITCHING IS TRANSIENT-FREE, AVOIDS LOSS OF LOOP LOCK
INNOVATOR NOT GIVEN /SPACE TECHNOL. LABS./ DEC. 1964
WOO-054

A CIRCUIT, IN A WIDE BANDWIDTH MODE, OVERCOMES TRANSIENT-PRODUCING CAPACITANCE SWITCHING BY MAINTAINING AN EQUIVALENT VOLTAGE AT ALL TIMES. BANDWIDTH SWITCHING MAY BE DONE AT ANY TIME, AND INTEGRITY OF THE LOOP LOCK IS MAINTAINED.

02 ENERGY SOURCES

B63-10260 SOLAR-ANGLE SENSOR HAS NO MOVING PARTS
EXNER, D. W., JR. MEISENHOLDER, G. W. SCHMIDT, L. F. MAY 1964
JPL-418

TO MEASURE THE DIRECTION OF THE SUN OVER A SPHERICAL FIELD OF VIEW, A CUBE-SHAPED SOLAR SENSOR WITH A PHOTOCELL ON EACH SIDE IS USED. THE OUTPUTS FROM THE SIX CELLS ARE FED INTO A COMPUTER FOR DETERMINING THE POSITION OF THE SUN RELATIVE TO AN ORTHOGONAL COORDINATE SYSTEM.

B63-10344 COOLING METHOD PROLONGS LIFE OF HOT-WIRE TRANSDUCER
BALDWIN, L. V. SANDBORN, V. A. JUN. 1964
LEWIS-41

TO COOL A HOT-WIRE TRANSDUCER, THE TWO ENDS OF THE WIRE ARE SUPPORTED ON THERMALLY AND ELECTRICALLY CONDUCTIVE RODS, SURROUNDED BY A FLUID COOLING MEDIUM. BY KEEPING THE SUPPORTING RODS AT A SUBSTANTIALLY CONSTANT TEMPERATURE, THE PROBE IS PREVENTED FROM OVERHEATING.

B63-10346 NEW METHOD USED TO FABRICATE LIGHT-WEIGHT HEAT EXCHANGER FOR ROCKET MOTOR
BAEHR, E. F. MAR. 1964
LEWIS-43

A GROOVED CAPSTRIP, TO STRADDLE THE METAL EDGES OF REGENERATIVE COOLING CHANNELS, INCREASES THE STRENGTH AND HEAT TRANSFER CHARACTERISTICS OF LIGHTWEIGHT MOTOR CASES. THIS CAPSTRIP IS SO DESIGNED AS TO FORM A FIRM JOINT BETWEEN THE CHANNELS THAT FORM THE ROCKET CASING WALL.

B63-10421 MIRROR DEVICE ALIGNS MACHINE SURFACE PERPENDICULAR TO SIGHT LINES
KISSLER, H. R. /RCA/ MAY 1964
WOO-5

A SIGHT ALIGNMENT DEVICE IS USED TO ALIGN TWO MACHINES SO THAT AN AXIS OF THE FIRST MACHINE IS PARALLEL TO A FLAT SURFACE ON THE SECOND. THIS SIGHTING DEVICE DEPENDS ON THE REFLECTION OF A LIGHT BEAM FROM THE SURFACE TO BE ALIGNED.

03 MATERIALS (CHEMISTRY)

B63-10004 REFERENCE BLACK BODY IS COMPACT, CONVENIENT TO USE
DIMEFF, J. NEEL, C. B. APR. 1964
ARC-3

TO REPLACE THE CLASSICAL HOLLOW SPHERE, A COMPACT REFERENCE BLACK BODY HAS BEEN CONSTRUCTED FROM STACKED RAZOR BLADES. TREATED WITH A DEPOSIT OF BLACK OXIDE ON THE SURFACES OR NOTCHES BETWEEN THE UPPER EDGES OF THE BLADES, THE DEVICE IS USEFUL OVER A WIDE RANGE OF INCIDENT ANGLES.

B63-10207 THERMALLY CONDUCTIVE METAL WOOL-SILICONE RUBBER MATERIAL CAN BE USED AS SHOCK AND VIBRATION DAMPER
HOUGH, W. W. APR. 1964
JPL-321

BRONZE WOOL PADS, IMPREGNATED WITH SILICONE RUBBER, MEET THE REQUIREMENT FOR A THERMALLY CONDUCTIVE, SHOCK AND VIBRATION ABSORBING MATERIAL. THEY SERVE AS SPACERS IN EQUIPMENT MOUNTING AND ARE RESISTANT TO HIGH TEMPERATURES.

B63-10234 FILTER FOR HIGH-PRESSURE GASES HAS EASY TAKE-DOWN, ASSEMBLY
MAC GLASHAN, W. F. FEB. 1964
JPL-373

A SMALL METAL FILTER BODY, FOR USE IN TUBING SUPPLYING STERILIZATION GASES, HAS AN INLET END THAT CAN BE UNSCREWED. INSIDE, THE HIGH PRESSURE FILTER IS SUPPORTED ON BOTH SIDES AND SEALED BY AN O-RING. DESIGN FACILITATES EASY ASSEMBLY AND DISASSEMBLY OF PARTS.

B63-10235 CRYOGENIC FILTER METHOD PRODUCES SUPER-PURE HELIUM AND HELIUM ISOTOPES
HILDEBRANDT, A. F. MAR. 1964
JPL-374

TO PURIFY HELIUM, IT IS COOLED IN A LOW PRESSURE ENVIRONMENT UNTIL IT BECOMES SUPERFLUID. THE LIQUID HELIUM IS THEN FILTERED THROUGH IRON OXIDE PARTICLES. HEATING, COOLING AND FILTERING PROCESSES CONTINUE UNTIL THE PURIFIED LIQUID HELIUM IS HEATED TO A GAS.

B63-10263 FRESNEL CUP REFLECTOR DIRECTS MAXIMUM ENERGY FROM LIGHT SOURCE
LAUE, E. G. YOUNGBERG, C. L. MAY 1964
JPL-424

TO MINIMIZE SHIELDING AND OVERHEATING, A COMPOSITE FRESNEL CUP REFLECTOR DESIGN DIRECTS THE MAXIMUM ENERGY FROM A LIGHT SOURCE. IT CONSISTS OF A UNIFORMLY ELLIPSOIDAL END SURFACE AND AN EXTENSION COMPRISING A SERIES OF CONFOCAL ELLIPSOIDAL AND CONCENTRIC SPHERICAL SURFACES.

B63-10311 OIL-SMEARED MODELS AID WIND TUNNEL MEASUREMENTS
KATZOFF, S. LOVING, D. K. 1 APR. 1964 /SEE NASA-MEMO-3-17-59L/
LANGLEY-4

FOR VISUALIZING FLOW CHARACTERISTICS IN WIND TUNNEL TESTS, MODEL SURFACES ARE SMEARED WITH ANY COMMON PETROLEUM-BASE OILS. THESE FLUORESCUE UNDER ULTRAVIOLET LIGHT AND THE FLOW PATTERNS ARE READILY VISUALIZED.

B63-10318 QUICK-HARDENING PROBLEMS ARE ELIMINATED WITH SPRAY GUN MODIFICATION WHICH MIXES RESIN AND ACCELERATOR LIQUIDS DURING APPLICATION
JOHNSON, O. W. MAR. 1964 /SEE U.S. PATENT NO. 2,930,532/

LANGLEY-6A

A MODIFIED SPRAY GUN, WITH SEPARATE CONTAINERS FOR RESIN AND ADDITIVE COMPONENTS, SOLVES THE PROBLEMS OF QUICK HARDENING AND NOZZLE CLOGGING. AT APPLICATION, SEPARATE ATOMIZERS SPRAY THE LIQUIDS IN FRONT OF THE NOZZLE FACE WHERE THEY BLEND.

B63-10337 GALLIUM USEFUL BEARING LUBRICANT IN HIGH-VACUUM ENVIRONMENT
BUCKLEY, D. H. MAY 1964 /SEE U.S. PATENT NO. 3,072,574/
LEWIS-12

SOLID GALLIUM IS USED AS A LUBRICANT ON BEARINGS MADE OF COMPATIBLE MATERIALS. SUCH LUBRICANTS PERFORM WELL IN A HIGH VACUUM, LOW TEMPERATURE.

B63-10345 APPARATUS FACILITATES HIGH-TEMPERATURE TENSILE TESTING IN VACUUM
SIKORA, P. F. JUN. 1964
LEWIS-42

AN APPARATUS FOR HEATING REFRACTORY MATERIALS TO HIGH TEMPERATURES DURING TENSILE TESTING INCLUDES A WATER-COOLED STAINLESS STEEL VACUUM CHAMBER. THIS CONTAINS A RESISTANCE HEATER CONSISTING OF A SLIT TUBE OF TANTALUM OR TUNGSTEN TO ENCLOSE THE TENSILE TEST ROD.

B63-10351 NEW COBALT ALLOYS HAVE HIGH-TEMPERATURE STRENGTH AND LONG LIFE IN VACUUM ENVIRONMENTS
ASHBROOK, R. L. FRECHE, J. C. KLIMA, S. J. MAR. 1964
LEWIS-47

COBALT REFRACTORY METAL ALLOYS COMBINE SHEET FORMABILITY, WITH HIGH TEMPERATURE STRENGTH AND LOW MATERIAL LOSS IN VACUUM.

B63-10365 LOW-COST INSULATION SYSTEM FOR CRYOSTATS ELIMINATES NEED FOR A VACUUM
CALVERT, H. F. MAY 1964
LEWIS-64

IN ORDER TO ELIMINATE THE HAZARD CAUSED BY RESIDUAL AIR TRAPPED BETWEEN THE CONCENTRIC SHELLS OF A CRYOSTAT, THESE ANNULAR SPACES ARE PRESSURIZED WITH HELIUM GAS. THIS SYSTEM IS MORE ECONOMICAL THAN THE USE OF POWDERED INSULATION MAINTAINED AT LOW VACUUMS.

B63-10378 LIQUID-LEVEL METER HAS NO MOVING PARTS
ESCUE, W. T. /BENDIX CORP./ JUN. 1964
M-FS-3

AN ELECTRO-OPTICAL SYSTEM, WITHOUT MOVING PARTS, RELIABLY INDICATES LIQUID LEVELS AT CRYOGENIC TEMPERATURES. GLASS PRISMS, WHICH ACT AS LIQUID LEVEL PROBES INSIDE THE TANK, EXTEND FROM OPTICALLY ALIGNED PHOTOELECTRIC ASSEMBLIES MOUNTED ON THE OUTSIDE.

B63-10389 LIGHTWEIGHT MAGNESIUM-LITHIUM ALLOYS SHOW PROMISE
ADAMS, W. T. CATALDO, C. E. JUN. 1964
M-FS-17

EVALUATION TESTS SHOW THAT MAGNESIUM-LITHIUM ALLOYS ARE LIGHTER AND MORE DUCTILE THAN OTHER MAGNESIUM ALLOYS. THEY ARE BEING USED FOR PACKAGING, HOUSINGS, CONTAINERS, ETC., WHERE LIGHTWEIGHT IS MORE IMPORTANT THAN STRENGTH.

B63-10424 VARIABLE LIGHT SOURCE WITH A MILLION-TO-ONE INTENSITY RATIO
SNOW, W. B. /SPACE TECHNOL. LAB./ MAY 1964
JPL-WOO-008

A WIDE RANGE, VARIABLE INTENSITY LIGHT SOURCE

OF CONSTANT COLOR CHARACTERISTICS HAS BEEN DEVELOPED FOR TESTING AND CALIBRATING PHOTOMULTIPLIER TUBES. A LIGHT ATTENUATOR FIRST DIFFUSES LIGHT FROM A CONSTANT SOURCE, THEN PERMITS VARIABLE ATTENUATION THROUGH A SERIES OF CHAMBERS AND ADJUSTABLE APERTURES.

B63-10429 WELDED PRESSURE TRANSDUCER MADE AS SMALL AS 1/8TH-INCH IN DIAMETER
COON, G. W. MAR. 1964 /SEE U.S. PATENT NO. 3,027,769/
ARC-11

A SPECIAL SPOT WELDING TECHNIQUE IS USED TO MAKE MINIATURE CAPACITANCE TRANSDUCERS FOR PLACING IN A WIND TUNNEL MODEL. RUGGED AND RELATIVELY LOW IN COST, THEY HAVE A FLAT RESPONSE UP TO ONE-THIRD OF THE RESONANT FREQUENCY.

B63-10453 MOLYBDENUM DISULFIDE MIXTURES MAKE EFFECTIVE HIGH-VACUUM LUBRICANTS
INNOVATOR NOT GIVEN /MIDWEST RES. INST./ NOV. 1964
M-FS-54

FIVE DIFFERENT MIXTURES OF MOLYBDENUM DISULFIDE ARE FOUND TO BE EFFECTIVE BEARING LUBRICANTS WHEN TESTED AT VERY LOW PRESSURES AND HIGH TEMPERATURES.

B63-10476 CESIUM IODIDE CRYSTALS FUSED TO VACUUM TUBE FACEPLATES
FLECK, H. G. /ELECTRO-MECHANICAL RES. INC./ MAY 1964
GSFC-67

A CESIUM IODIDE CRYSTAL IS FUSED TO THE LITHIUM FLUORIDE FACEPLATE OF A PHOTON SCINTILLATOR IMAGE TUBE. THE CONVENTIONAL SILVER CHLORIDE SOLDER IS THEN USED TO ATTACH THE FACEPLATE TO THE METAL SUPPORT.

B63-10479 IMPROVED MOLYBDENUM DISULFIDE-SILVER MOTOR BRUSHES HAVE EXTENDED LIFE
HORTON, J. C. KING, H. M. MAY 1964
M-FS-64

MOTOR BRUSHES OF PROPER QUANTITIES OF MOLYBDENUM DISULFIDE AND COPPER OR SILVER ARE MANUFACTURED BY SINTERING TECHNIQUES. GRAPHITE MOLDS ARE USED. THESE BRUSHES OPERATE SATISFACTORILY FOR LONG PERIODS IN NORMAL ATMOSPHERE OR IN A HIGH-VACUUM ENVIRONMENT.

B63-10481 REFRACTORY CERAMIC HAS WIDE USAGE, LOW FABRICATION COST
INNOVATOR NOT GIVEN /GEORGIA INST. OF TECH./ APR. 1964
M-FS-67

PARTICULATE, FUSED AMORPHOUS SILICA IS FORMED INTO COMPLEX SHAPES BY CASTING IN PLASTER MOLDS. HIGH TEMPERATURE FIRING IS NOT REQUIRED. THIS CERAMIC IS RESISTANT TO THERMAL SHOCK AND EXHIBITS GOOD STRENGTH PROPERTIES.

B63-10528 VARIABLE-TRANSPARENCY WALL REGULATES TEMPERATURES OF STRUCTURES
OSULLIVAN, W. J., JR. JUN. 1964
LANGLEY-25

AN EFFECTIVE TEMPERATURE REGULATING WALL CONSISTS OF ONE LAYER /E.G. ONE OF THE PARAFFINS/ RELATIVELY OPAQUE TO THERMAL RADIATION IN THE SOLID STATE AND TRANSPARENT TO IT IN THE MOLTEN STATE AND PLACED BETWEEN TWO TRANSPARENT LAYERS. A MIRROR COATING IS APPLIED TO BACK LAYER.

B63-10546 TEST DEVICE PREVENTS MOLECULAR BOUNCE-BACK
HARDGROVE, W. F. SHAPIRO, H. JULY 1964
GSFC-82

A TEST DEVICE, WHICH CONSISTS OF SIX PYRAMIDAL REFLECTORS JOINED TOGETHER, ACTS AS A Baffle TO IMPEDE THE FREE PATH OF THE MOLECULE TO THE TEST ITEM BY INTERPOSING A SLANTED SURFACE WHICH IMPARTS AN ANGULAR VECTOR TO THE MOLECULE AND BOUNCES IT BACK TO THE CHAMBER WALL.

B63-10557 RAPID HELIUM-AIR ANALYZER CAN MEASURE OTHER BINARY GAS MIXTURES
MELFI, L. T. WOOD, G. M. YEAGER, P. R. FEB. 1964
LANGLEY-16

AN INSTRUMENT COMPRISED OF AN IONIZATION PRESSURE GAUGE & A DIAPHRAGM PRESSURE GAUGE CONSISTING OF STRAIN GAUGES TO MAKE A FOUR-ARM BRIDGE, AND A RATIO METER IS CONSTRUCTED FOR ANALYZING GAS MIXTURES. THE RATIO OF THE OUTPUTS OF THE TWO GAUGES IS PROPORTIONAL TO THE MIXTURE COMPOSITION.

B63-10562 GATE VALVE WITH CERAMIC-COATED BASE OPERATES AT HIGH TEMPERATURES
BRASS, A. JUL. 1964
ARC-23

A COPPER BASE INSERT COATED WITH A LAYER OF ALUMINUM OXIDE CERAMIC PREVENTS FRICTIONAL BINDING BETWEEN THE GATE AND BASE SURFACES OF A GATE VALVE WHICH ARE SUBJECT TO RAPID SLIDING ACTION AND HIGH TEMPERATURES.

B63-10612 METALS PLATED ON FLUOROCARBON POLYMERS
FORD, H. KRASINSKY, J. B. VANGO, S. P. OCT. 1964
JPL-544

ELECTROPLATING LEAD ON FLUOROCARBON POLYMER PARTS IS ACCOMPLISHED BY ETCHING THE PARTS TO BE PLATED WITH SODIUM, FOLLOWED BY SUCCESSIVE DEPOSITIONS OF SILVER AND LEAD FROM ULTRASONICALLY AGITATED PLATING SOLUTIONS. METALS OTHER THAN LEAD MAY BE ELECTROPLATED ON THE SILVERED PARTS.

B64-10068 MECHANICAL PROPERTIES OF PLASTICS PREDETERMINED BY EMPIRICAL METHOD
LOHR, J. J. PARKER, J. A. JUL. 1964
ARC-28

TO PREDETERMINE THE MECHANICAL PROPERTIES OF RIGID PLASTICS AS A FUNCTION OF PLASTICIZER CONTENT AND COMPOSITION, A SET OF EQUATIONS HAS BEEN EMPIRICALLY DERIVED. THESE RELATE STRAIN RATE, YIELD STRESS, TEMPERATURE, AND WEIGHT FRACTION OF THE PLASTICIZER.

B64-10099 REFRACTORY THERMAL INSULATION FOR SMOOTH METAL SURFACES
INNOVATOR NOT GIVEN /GOODYEAR AEROSPACE CORP./ OCT. 1964
M-FS-160

TO PROTECT ROCKET METAL SURFACES FROM ENGINE-EXHAUST HEAT, A REFRACTORY THERMAL INSULATION MIXTURE, WHICH ADHERES TO SMOOTH METALS, HAS BEEN DEVELOPED. INSULATION PROTECTION OVER A WIDE TEMPERATURE RANGE CAN BE CONTROLLED BY THICKNESS OF THE APPLIED MIXTURE.

B64-10113 ELASTOMERS BONDED TO METAL SURFACES SEAL ELECTROCHEMICAL CELLS
SHERFEY, J. M. AUG. 1964
GSFC-168

A LEAKPROOF SEAL SECONDARY CELLS CONTAINING ALKALINE ELECTROLYTES WAS DEVELOPED BY BONDING AN ALKALI-RESISTANT ELASTOMER, SUCH AS NEOPRENE, TO METAL CONTACT SURFACES. TEST RESULTS OF SEVERAL DIFFERENT ELASTOMERS STRONGLY INDICATE THE FEASIBILITY OF THIS SEALING METHOD.

B64-10116 LEAD OXIDE CERAMIC MAKES EXCELLENT HIGH-TEMPERATURE LUBRICANT
JOHNSON, R. L. SLINNEY, H. E. AUG. 1964
LEWIS-144

A DRY LUBRICANT COATING IN CERAMIC FORM CONSISTING OF 95 PER CENT LEAD MONOXIDE AND FIVE PER CENT SILICON DIOXIDE WITHSTOOD A TEMPERATURE OF 1,200 F. WITH A BEARING OPERATING AT VARIOUS ATMOSPHERIC PRESSURES. FROM THIS TESTING, THERE WAS NO GALLING OR METAL TRANSFER OF THE BEARING.

B64-10138 NOVEL SHOCK ABSORBER FEATURES VARYING YIELD STRENGTHS
GEIER, D. J. JUL. 1964
MSC-63A

A SHOCK ABSORBENT WEBBING OF PARTIALLY DRAWN SYNTHETIC STRANDS IS ARRANGED IN SECTIONS OF VARYING DENSITY RELATED TO THE VARYING MASS OF THE HUMAN BODY. THIS IS CONTOURED TO PROTECT THE BODY AT POINTS OF CONTACT, WHEN SUBJECTED TO LARGE ACCELERATION OR DECELERATION FORCES.

B64-10142 STRINGENT CLEANING TECHNIQUE ASSURES RELIABLE EPOXY BOND
INNOVATOR NOT GIVEN /RCA/ JUN. 1964
GSFC-161

FOR RELIABLE ALUMINUM BONDING TO WITHSTAND STRESS, THE MATING SURFACES ARE CAREFULLY CLEANED, ETCHED, RINSED AND DRIED. AN EPOXY AND HARDENER DESIGNED FOR METAL-TO-METAL BONDING IS THEN USED FOR A RIGID ASSEMBLY.

B64-10151 PLASTIC FILMS FOR REFLECTIVE SURFACES REPRODUCED FROM MASTERS
INNOVATOR NOT GIVEN /MINNEAPOLIS HONEYWELL/ OCT. 1964
GSFC-188

ACCURATE REPRODUCTION IN PLASTIC OF THE SURFACE OF THE OPTICAL MASTER TO WHICH A REFLECTIVE FINISH MAY BE APPLIED IS DONE BY USING BACKING FROM ANY SUITABLE MATERIAL TO WHICH CURED PLASTIC WILL ADHERE TIGHTLY. PLASTICS USED FOR REFLECTORS SHOULD BE OF THE THERMOSETTING OR CATALYTICALLY HARDENED TYPE.

B64-10166 FILLER DEVICE FOR HANDLING HOT CORROSIVE MATERIALS
INNOVATOR NOT GIVEN /PRATT AND WHITNEY AIRCRAFT/ OCT. 1964
MSC-85

A BELLOWS-TYPE BAG WITH ITS OWN HEATING ELEMENT IS DEVELOPED FOR SAFE HANDLING AND INJECTION OF HOT CORROSIVE LIQUIDS INTO MODULES.

B64-10206 SOLDER FLUX LEAVES CORROSION-RESISTANT COATING ON METAL
BAUMAN, A. J. OCT. 1964
JPL-611

A SOLDERING FLUX CONSISTING OF PERFLUORO-OCTANOIC ACID HYDRAZINE PROVIDES A CORROSION RESISTANT FILM ON METAL SURFACE, PARTICULARLY COPPER. IT IS INEFFECTIVE FOR SOLDERING ALUMINUM.

B64-10270 PRESSURE MOLDING OF POWDERED MATERIALS IMPROVED BY RUBBER MOLD INSERT
INNOVATOR NOT GIVEN /ELECTRO-OPTICAL SYSTEMS CORP./ NOV. 1964
WOO-100

PRESSURE MOLDING TUNGSTEN MICROSPHERES IS ACCOMPLISHED BY APPLYING HYDRAULIC PRESSURE TO A SILICONE RUBBER MOLD INSERT WITH SEVERAL BARREL SHAPED CHAMBERS WHICH IS PLACED IN A STEEL DIE CAVITY. THIS TECHNIQUE ELIMINATES CASTINGS CONTAINING SHEAR FRACTURES.

B64-10282 FINE-MESH SCREEN MADE BY SIMPLIFIED METHOD
INNOVATOR NOT GIVEN /HUGHES AIRCRAFT CO./ DEC.
1964
WOO-104

STRONG FINE-MESH SCREENS ARE FABRICATED BY A
METHOD INVOLVING UNIFORM DISTRIBUTION OF FINE
FERROMAGNETIC PARTICLES ON A NONMAGNETIC PLATE.
SUCH SCREENS ARE COMMONLY USED FOR GRIDS IN
ELECTRON TUBES AND ION DEVICES.

B64-10319 GAS DIFFUSION CELL REMOVES CARBON DIOXIDE FROM
OCCUPIED AIRTIGHT ENCLOSURES
INNOVATOR NOT GIVEN /IOWA U./ DEC. 1964
MSC-118

A SMALL, LIGHTWEIGHT PERMEABLE CELL PACKAGE
SEPARATES AND REMOVES CARBON DIOXIDE FROM RES-
PIRATORY REGENERATIVE WHILE CHEMICALLY INERT IN
THE PRESENCE OF CARBON DIOXIDE SO THAT ONLY
ADSORPTION TAKES PLACE.

04 LIFE SCIENCES

B63-10003 NEW LOW-LEVEL A-C AMPLIFIER PROVIDES ADJUST-
ABLE NOISE CANCELLATION AND AUTOMATIC TEMPERA-
TURE COMPENSATION
SMITH, J. R., JR. MAR. 1964
ARC-2

A CIRCUIT UTILIZING A TRANSISTORIZED
DIFFERENTIAL AMPLIFIER IS DEVELOPED FOR BIOMEDICAL
USE. THIS LOW VOLTAGE OPERATING CIRCUIT PROVIDES
ADJUSTABLE CANCELLATION AT THE INPUT FOR
UNBALANCED NOISE SIGNALS, AND AUTOMATIC
TEMPERATURE COMPENSATION IS ACCOMPLISHED BY A
SINGLE ACTIVE ELEMENT ACROSS THE INPUT-OUTPUT
ENDS.

B64-10025 IMPROVED ELECTRODE GIVES HIGH-QUALITY
BIOLOGICAL RECORDINGS
DAY, J. L. LIPPITT, M. W. MAY 1964
MSC-17

TO OBTAIN HIGH QUALITY WAVEFORMS FROM A
SUBJECT ENGAGED IN PHYSICAL ACTIVITY, AN IMPROVED
ELECTRODE ASSEMBLY HAS BEEN DEvised. THIS
CONSISTS OF A CUP CONTAINING AN ELECTRICALLY
CONDUCTIVE PASTE AND A SILVER ELECTRODE. THE
PASTE MAINTAINS CONTACT BETWEEN THE SKIN AND THE
PLATE.

B64-10108 DEVICE INDUCES LUNGS TO MAINTAIN KNOWN
CONSTANT PRESSURE
LIPPITT, M. W. REED, J. H. JUL. 1964
MSC-50

THIS DEVICE REQUIRES THE USE OF THORACIC
MUSCLES TO MAINTAIN PRESCRIBED AIR PRESSURE IN THE
LUNGS FOR BRIEF PERIODS. IT CONSISTS OF A CLEAR
PLASTIC HOLLOW CYLINDER FITTED WITH A MOUTHPIECE,
A SPRING-LOADED PISTON, AND A SMALL VENT FOR
ESCAPING AIR WHEN EXHALATION INTO THE MOUTHPIECE
DISPLACES THE PISTON.

B64-10146 TECHNIQUE SIMULATES EFFECT OF REDUCED GRAVITY
HEWES, D. E. SPADY, A. A. JR. JUN. 1964
LANGLEY-44

TO SIMULATE THE EFFECTS OF LUNAR GRAVITY, AN
ARRANGEMENT OF NEAR-VERTICAL CABLES HAS BEEN
DEvised. THESE SUSPEND THE TEST SUBJECT
PERPENDICULAR TO AN INCLINED WALKWAY TO GIVE THE
EFFECT OF REDUCED GRAVITATIONAL PULL.

05 MECHANICAL

B63-10007 HIGH PURITY ELECTROFORMING YIELDS SUPERIOR
METAL MODELS

HAEFELI, R. M. HOUSTON, J. P. JAN. 1964
ARC-6

ULTRASONIC ELECTROFORMING HAS PROVEN SUCCESS-
FUL IN MAKING HIGH PURITY METAL MODELS FOR HEAT
TRANSFER STUDIES. THIS PROCESS PROVIDES SMOOTH,
PIT-FREE MODELS.

B63-10008 VACUUM FORMING OF THERMOPLASTIC SHEET RESULTS
IN LOW-COST INVESTMENT CASTING PATTERNS
CLARKE, A. E., JR. MAR. 1964
ARC-7

VACUUM FORMING OF A SHEET OF THERMOPLASTIC
MATERIAL AROUND AMANDREL CONFORMING TO THE SHAPE
OF THE FINISHED OBJECT PROVIDES A PATTERN FOR AN
INVESTMENT MOLD. THE THICKNESS OF THE METAL PART
IS DETERMINED BY THE THICKNESS OF THE PLASTIC PAT-
TERN.

B63-10009 CHAIN FRICTION SYSTEM GIVES POSITIVE, REVERS-
IBLE DRIVE
DAVIDSEN, J. S. APR. 1964
ARC-8

BY CEMENTING A STRIP OF AN ELASTOMER TO THE
SMOOTH METAL RIM OF THE PULLEY AND NEOPRENE COVER-
ED IDLERS PROVIDING SUITABLE TENSION TO THE CHAIN
AROUND THE PULLEY, A POSITIVE REVERSIBLE DRIVE IS
ACCOMPLISHED MORE QUIETLY AND WITH LESS VIBRATION.

B63-10023 V-SLOTTED SCREW HEAD AND MATCHING DRIVING TOOL
FACILITATE INSERTION AND REMOVAL OF SCREW
FASTENERS
HANDLEY, M. G. JAN. 1964
FRC-16

A V-SLOTTED DESIGNED SCREW AND A SCREWDRIVER
WITH A V-SHAPED TANG FACILITATES DRIVING THE SCREW
INTO DIFFICULT LOCATIONS AND MINIMIZES AXIAL
FORCES THUS AVOIDING DAMAGE TO THE SCREW.

B63-10123 ELASTIC ORIFICE AUTOMATICALLY REGULATES GAS
BEARINGS
BATSCH, F. LAUB, J. L. JUN. 1964
JPL-135

AN ELASTIC, PRESSURE-SENSITIVE ORIFICE IS
USED TO AUTOMATICALLY REGULATE THE RATE OF GAS
FLOW INTO BEARINGS UNDER VARYING LOADS.
FORMED OF A MOLDED ELASTOMER, TESTS SHOW THESE
ORIFICES INCREASE THE STABILITY OF GAS BEARINGS.

B63-10139 METHOD OF WELDING JOINT IN CLOSED VESSEL
IMPROVES QUALITY OF SEAM
FREEMAN, R. LEVOE, C. MAY 1964
JPL-170

TO FACILITATE WELDING OF CLOSED VESSELS, A
METAL BACKUP STRIP IS USED AT THE JUNCTION INSIDE
THE VESSEL. AFTER WELDING FROM THE OUTSIDE, THIS
STRIP IS DISSOLVED BY A CHEMICALLY REACTIVE
SOLVENT POURED THROUGH A FILLER HOLE INTO THE
VESSEL.

B63-10141 VENTED PISTON SEAL PREVENTS FLUID LEAKAGE
BETWEEN TWO CHAMBERS
MAC GLASHAN, W. F. MORRISON, R. DEC. 1964
JPL-179

TO PREVENT FLUID LEAKAGE AROUND PISTON SEALS
SEPARATING TWO FLUIDS UNDER DIFFERENTIAL
PRESSURE, A VENTING SYSTEM HAS BEEN DEvised. TWO
METHODS MAY BE USED FOR VENTING SEALS THROUGH
INTERNAL PASSAGES TO AN EXTERNAL LOW-PRESSURE
AREA, O-RING OR SPLIT-RING SEALS.

B63-10143 COINCIDENT SWITCH CLOSING REDUCES ERROR IN
MOTOR-DRIVEN TIMER
RICH, S. DEC. 1964
JPL-182

TO CUT THE LAG-LEAD IN MOTOR-DRIVEN TIMING DEVICES, THE TIMING CIRCUIT HAS BEEN EXTENDED TO INCLUDE A SECOND SWITCH. THIS IS ACTUATED IN TIME WITH THE FIRST BUT DRIVEN DIRECTLY AT A SPEED X TIMES FASTER THAN THE FIRST

B63-10170 HIGH-PRESSURE REGULATING SYSTEM PREVENTS PRESSURE SURGES
KELLER, O. F. MACGLASHAN, W. F. JUN. 1964 /SEE
U.S. PATENT NO. 3,105,515/
JPL-231

GAS FLOW IS CONTROLLED BY MEANS OF A PRESSURE REGULATING SYSTEM WHICH PREVENTS PRESSURE SURGES. A HIGH-PRESSURE FLUID SOURCE, A SPRING-LOADED FLUID-DAMPED REGULATOR VALVE, AN ACCUMULATOR, A CONVENTIONAL NORMALLY CLOSED COMMAND VALVE, AND A CONTROL VALVE ARE THE MAIN COMPONENTS.

B63-10198 DEVICE TRANSMITS ROTARY MOTION THROUGH HERMETICALLY SEALED WALL
PORTER, R. N. APR. 1964
JPL-303

A WOBBLE PLATE, METAL BELLOWS, AND TWO SHAFTS, ASSEMBLED IN A FOUR-SECTION HOUSING, MAKES IT POSSIBLE TO TRANSMIT ROTARY MOTION THROUGH A HERMETICALLY SEALED WALL. IN OPERATION A ROTATIONAL TORQUE IS DEVELOPED BY THE WOBBLE PLATE.

B63-10200 APPARATUS OF SMALL SIZE CAN BE EXTENDED INTO LONG, RIGID BOOM
MILLER, J. V. MAY 1964
JPL-305

THREE METAL SHEETS, HAVING PRENOTCHED EDGES, ARE INTERLOCKED AS THEY ARE UNROLLED FROM THREE FEED ROLLERS, WHICH FORM A TRIANGLE. THE APPARATUS IS RELATIVELY SMALL, AND THE SHEETS CAN BE ERECTED INTO A RIGID TRIANGULAR BOOM OF CONSIDERABLE LENGTH.

B63-10226 SELF SEALING DISCONNECT FOR TUBING FORMS METAL SEAL AFTER BREAKAWAY
GERNANDY, H. H. JAN. 1964
JPL-354

DISCONNECT FITTINGS FORM A POSITIVE METAL SEAL WHEN THE FILL TUBE PULLS AGAINST A METAL SLEEVE WHEN DISCONNECTED BY FORCE. A SPECIALLY DESIGNED SLEEVE SURROUNDS THE FILL TUBE. O-RINGS IN THE SHOULDER OF THE SLEEVE AND NEAR THE OUTER END OF THE FILL TUBE SEAL AGAINST LEAKAGE.

B63-10228 PACKLESS VALVE WITH ALL-METAL SEAL HANDLES WIDE TEMPERATURE, PRESSURE RANGE
MAC GLASHAN, W. F. MAR. 1964
JPL-361

A DURABLE LINE VALVE UTILIZES STACKED METAL DISKS TO SEAL OFF AN INLET PORT. NO PACKING OR SHAFT SEALING IS NEEDED, AND THE VALVE OPERATES SATISFACTORILY OVER A WIDE TEMPERATURE AND PRESSURE RANGE.

B63-10236 LIGHTWEIGHT UNIVERSAL JOINT TRANSMITS BOTH TORQUE AND THRUST
BAMFORD, R. M. JAN. 1964
JPL-375

A LIGHTWEIGHT UNIVERSAL JOINT USES A THIN STEEL FLEXURE PLATE TO TRANSMIT TORQUE AND A STEEL ROD TO TRANSMIT THRUST. BOTH, THE PLATE AND ROD ARE INDEPENDENTLY MOUNTED AND CAN ACT INDIVIDUALLY.

B63-10237 SUPERCOLD TECHNIQUE DUPLICATES MAGNETIC FIELD IN SECOND SUPERCONDUCTOR
HILDEBRANDT, A. F. NOV. 1964
JPL-376

A SUPERCONDUCTOR CYLINDER, CHARGED WITH A HIGH MAGNETIC FIELD, CAN BE USED TO CREATE A SIMILAR FIELD IN A LARGER CYLINDER. THE UNCHARGED CYLINDER IS PRECOOLED, LOWERED INTO A HELIUM DEWAR SYSTEM, AND FITTED AROUND THE CYLINDER WITH THE MAGNETIC FIELD. MAGNETIC FLUX LINES PASS THROUGH THE TWO CYLINDERS.

B63-10240 SLEEVE AND CUTTER SIMPLIFY DISCONNECTING WELDED JOINT IN TUBING
PERKINS, G. S. APR. 1964
JPL-384

TO TEST EQUIPMENT, WELDED TUBING JOINTS MAY HAVE TO BE DISCONNECTED AND REWELDED. TO ELIMINATE REWELDING, A NONSTANDARD WELDING SLEEVE PERMITS THE TUBING TO BE WELDED AND THEN DISCONNECTED BY A SPECIALLY DESIGNED SLEEVE CUTTER. USE OF THIS TOOL ASSURES THAT ONLY THE SLEEVE IS CUT.

B63-10241 VEITCH DIAGRAM PLOTTER SIMPLIFIES BOOLEAN FUNCTIONS
RUBIN, D. K. APR. 1964
JPL-385

THIS DEVICE FOR SIMPLIFYING THE PLOTTING OF A VEITCH DIAGRAM CONSISTS OF SEVERAL OVERLAYS FOR BLOCKING OUT THE UNWANTED SQUARES. THIS METHOD OF PLOTTING THE VARIOUS INPUT COMBINATIONS TO A COMPUTER IS USED IN CONJUNCTION WITH THE BOOLEAN FUNCTIONS.

B63-10247 NEW PACKAGE FOR BELLEVILLE SPRING PERMITS RATE CHANGE, EASY DISASSEMBLY
MAC GLASHAN, W. F. MAR. 1964
JPL-392

A SPRING PACKAGE, WITH GROOVES TO HOLD THE SPRING WASHERS AT THE INNER AND OUTER EDGES, REDUCES HYSTERESIS TO A MINIMUM. THREE-SEGMENT RETAINERS PERMIT EASY DISASSEMBLY SO THAT THE SPRING RATE CAN BE CHANGED.

B63-10251 HELICAL TUBE SEPARATES NITROGEN GAS FROM LIQUID NITROGEN
STEPHENS, J. B. JUN. 1964
JPL-398

TO PREVENT A BOILOFF PROBLEM, LIQUID NITROGEN FLOWING FROM A STORAGE TANK TO A CONTAINER, IS SEPARATED INTO LIQUID AND GASEOUS COMPONENTS. THIS IS ACCOMPLISHED BY CENTRIFUGAL AND VENTING ACTION, USING A SECTION OF PERFORATED HELICAL ALUMINUM TUBING.

B63-10289 FRICTIONAL WEDGE SHOCK MOUNT IS INEXPENSIVE, HAS GOOD DAMPING CHARACTERISTICS
TENER, W. M. MAY 1964
JPL-IT-1001

A WEDGE-SHAPED SHOCK MOUNT USES RUBBER FOR ENERGY ABSORPTION, AND THE FRICTIONAL CHARACTERISTICS OF ORDINARY BRAKE MATERIAL FOR DAMPING.

B63-10291 SPECIAL PLIERS CONNECT HOSE CONTAINING LIQUID UNDER PRESSURE
BLAYDES, R. A. MAR. 1964
JPL-IT-1003

FOR SPEED AND SAFETY IN HANDLING DISCONNECT FITTINGS ON A HOSE CARRYING LIQUID UNDER PRESSURE, SPECIAL PLIERS HAVE BEEN CONSTRUCTED. A GEAR AND RACK MECHANISM IS COMBINED WITH TWO OR MORE WIDE-OPENING U-SHAPED JAWS WHICH ARE PLACED OVER THE QUICK-DISCONNECT FITTINGS.

B63-10292 HEAVY-DUTY STAPLE REMOVER OPERATED BY HAND
MORRISON, T. RENNER, R. MAR. 1964
JPL-IT-1004

TO REMOVE STAPLES FROM THICK REPORTS, A ROOTER, BENDING HOOK AND POST ARE INCORPORATED INTO A HEAVY DUTY HAND TOOL. THIS MAKES POSSIBLE ONE-STEP EXTRACTION OF LONG STAPLES.

B63-10304 BREAK-UP OF METAL TUBE MAKES ONE-TIME SHOCK ABSORBER, BARS REBOUND
HATHAWAY, M. MC GEHEE, J. R. ZAVADA, E. FEB. 1964 /SEE NASA-TN-D-1477/
LANGLEY-1A

A FRANGIBLE METAL TUBE HAS THE CAPABILITY TO DISSIPATE THE ENERGY GENERATED WHEN A VEHICLE LANDS WITH EXCESSIVE VELOCITY. THE TUBE IS SO PLACED THAT, AT IMPACT, IT IS FORCED AGAINST A DIE AND, AS IT FRAGMENTS, ENERGY IS ABSORBED.

B63-10340 CRYOPUMPING OF HYDROGEN IN VACUUM CHAMBERS IS AIDED BY CATALYTIC OXIDATION OF HYDROGEN
CHILDS, J. H. GROBMAN, J. RAYLE, W. JUN. 1964 /SEE NASA-TN-D-863/
LEWIS-15

VACUUM TEST FACILITIES ARE REQUIRED FOR HIGH SPEED CRYOPUMPING OF GASEOUS HYDROGEN AT LOW PRESSURES. ONE METHOD INVOLVES THE CATALYTIC OXIDATION OF HYDROGEN AND CONDENSATION OF THE RESULTING WATER ON A LIQUID NITROGEN-COOLED SURFACE.

B63-10341 DESIGN OF VALVE PERMITS SEALING EVEN IF THE STEM IS MISALIGNED
SCHMIDT, H. W. JAN. 1964
LEWIS-38

A CONICAL-WALLED VALVE PLUG IS DESIGNED TO SEAL AGAINST A RECESSED SPHERICAL VALVE SEAT. THIS INSURES PROPER SEALING DURING NUMEROUS SEATING CYCLES EVEN THOUGH THE VALVE STEM IS MISALIGNED OR FORCED OUT OF ITS PROPER AXIS.

B63-10354 RAPID BILLET LOADER AIDS EXTRUSION OF REFRACTORY METALS
OOLINSHEK, A. F. HERMAN, L. E. APR. 1964
LEWIS-50

A COMBINATION GRAVITY AND MANUALLY POWERED RAPID BILLET LOADER REDUCES THE TIME REQUIRED FOR TRANSFERRING HOT METAL BILLETS FROM A HEATING FURNACE TO AN EXTRUSION PRESS. POSITIONED BETWEEN THE FURNACE AND EXTRUSION PRESS, THIS LOADER IS A SIMPLE SLIDE-DELIVERY DEVICE.

B63-10367 CONNECTOR FOR VACUUM-JACKETED LINES CUTS TUBING SYSTEM COST
CALVERT, H. F. MAY 1964
LEWIS-66

A LOW-COST FITTING, FABRICATED FROM STANDARD CONNECTORS, IS USED FOR DISCONNECTING FLOW LINES IN CRYOGENIC SYSTEMS. UTILIZING VACUUM-JACKETED LINES MADE FROM TWO SIZES OF TUBING WELDED AT THE ENDS, THE CONNECTORS ARE STRONGER AND SETUP TIME IS REDUCED.

B63-10368 COMPOSITE, VACUUM-JACKETED TUBING REPLACES BELLOWS IN CRYOGENIC SYSTEMS
CALVERT, H. F. JUN. 1964
LEWIS-67

FOR RELIABILITY CONTROL OF HIGH PRESSURE CRYOGENIC SYSTEMS, ONE OR MORE 90 DEGREE ELBOW EXPANSION DEVICES ARE SUBSTITUTED FOR THE METAL BELLOWS NORMALLY USED. THE DEVICE CONSISTS OF A CONDUCTING TUBE INSIDE A SUPPORT TUBE, WITH THE SPACE BETWEEN THE TUBES EVACUATED FOR INSULATION.

B63-10376 NOVEL CLAMPS ALIGN LARGE ROCKET CASES, ELIMINATE BACK-UP BARS
FRANKLIN, W. J. MARTIN, N. C. JAN. 1964
M-FS-1

WELDING CLAMPS, PLACED INSIDE AND OUTSIDE A ROCKET CASE, HOLD IT IN PROPER ALIGNMENT DURING TUNGSTEN INERT GAS WELDING. THESE METAL BLOCKS, CONNECTED BY A STAINLESS STEEL BAND, ELIMINATES THE NEED FOR BACKUP BARS.

B63-10384 VACUUM-TYPE BACKUP BAR SPEEDS WELD REPAIRS
CARMODY, R. J. AUG. 1964
M-FS-12

A BACKUP BAR DESIGNED TO USE BOTH VACUUM AND AIR PRESSURE PROVIDES A METHOD OF SEALING THE WELD ROOT OF A FAULTY SECTION OF SEAM WELD. WITH SLIGHT REDESIGN, THE BAR CAN BE MADE SUFFICIENTLY FLEXIBLE TO FIT ANY LARGE CYLINDRICAL SURFACE.

B63-10385 FLEXIBLE HONEYCOMB STRUCTURE CAN BEND TO FIT COMPOUND CURVES
CARMODY, R. J. APR. 1964
M-FS-13

FOR FLEXIBILITY IN FORMING A CURVED SURFACE, A HONEYCOMB CONFIGURATION USING MULTIPLE PLEATS HAS PROVED SUPERIOR TO THE USUAL CORE STRUCTURES. THE PARTIAL PLEATS FORMED IN INDIVIDUAL CELL WALLS PERMITS MOVEMENTS TO AND FROM THE CENTRAL AXIS WITHOUT TEARING.

B63-10387 PORTABLE FLOORING PROTECTS FINISHED SURFACES, IS EASILY MOVED
CARMODY, R. J. MAR. 1964
M-FS-15

TO PROTECT CURVED, FINISHED SURFACE AND PROVIDE SUPPORT FOR WORKMEN, PORTABLE FLOORING HAS BEEN MADE FROM RIGID PLASTIC FOAM BLOCKS, FACED WITH ALUMINUM STRIPS. HELD TOGETHER BY NYLON WEBBING, THE FLOORING CAN BE ROLLED UP FOR EASY CARRYING.

B63-10420 SIMPLE MECHANISM COMBINES POSITIVE LOCKING AND QUICK-RELEASE FEATURES
CLAYTON, L. B. /HUGHES AIRCRAFT CO./ FEB. 1964
WOD-4

FOR SECURE LOCKING AND QUICK RELEASE OF TWO OBJECTS, THIS DEVICE USES A SPRING-LOADED SLOTTED BOLT, LOCKED IN POSITION BY TWO RETAINER ARMS. WHEN THESE RETAINER ARMS ARE FREED FROM CONTACT, THE BOLT IS EJECTED AND THE OBJECTS RELEASED.

B63-10431 HIGH-TEMPERATURE, HIGH-PRESSURE SPHERICAL SEGMENT VALVE PROVIDES QUICK OPENING
GIOVANNETTI, A. HIMMELRIGHT, R. MEYER, K. NITTA, H. APR. 1964
ARC-13

A HOLLOW SPHERICAL SEGMENT VALVE WITH AN ECCENTRIC PERMITS NON-RUBBING CLOSURE AND PROVIDES A MEANS FOR GAS-COOLING THE SEAL. THE DESIGN ALLOWS QUICK OPENING AT HIGH TEMPERATURES AND DISCHARGE PRESSURES.

B63-10435 PORTABLE DISPLAY PANELING HAS WIDE USE, EASY TAKE DOWN AND ASSEMBLY
DEVOTO, H. J., JR. MAR. 1964
ARC-17

DESIGN FOR A MODULAR DISPLAY PANEL IS BASED ON A CROSS-SHAPED CORNER CONNECTOR AND WOODEN LATTICE BARS. THE BARS ARE FITTED INTO THE ARMS OF THE METAL CONNECTOR AND A POCKET SLOT HOLDS A MODULAR-SIZE PANEL.

B63-10442 KINETIC-ENERGY ABSORBER EMPLOYS FRICTIONAL FORCE BETWEEN MATING CYLINDERS
CONRAD, E. W. MAY 1964
LEWIS-75

A KINETIC ENERGY ABSORBING DEVICE USES A SERIES OF COAXIAL, MATING CYLINDRICAL SURFACES. THESE SURFACES HAVE HIGH FRICTIONAL RESISTANCE TO

RELATIVE MOTION WHEN AXIAL IMPACT FORCES ARE APPLIED. THE DEVICE IS DESIGNED FOR SAFE DECELERATION OF VEHICLES IMPACTING ON LANDING SURFACES.

863-10489 FINE-PARTICLE FILTER PREVENTS DAMAGE TO VACUUM PUMPS
HARLAMERT, P., JR. APR. 1964
LEWIS-106

A FILTER SYSTEM FOR MECHANICAL PUMPS IS DESIGNED WITH A BAFFLE ASSEMBLY THAT ROTATES IN A CIRCULATING OIL BATH WHICH TRAPS DESTRUCTIVE PARTICLES. THIS PREVENTS SEVERE DAMAGE TO THE PUMP AND IS SERVICEABLE FOR LONG PERIODS BEFORE IT REQUIRES CLEANING.

863-10497 INTEGRAL COOLANT CHANNELS SIMPLY MADE BY MELT-OUT METHOD
ESCHER, W. J. D. JUN. 1964
M-FS-91

A MELT-OUT METHOD OF CONSTRUCTING STRONG, PRESSURE-TIGHT FLUID COOLANT CHANNELS FOR CHAMBERS IS ACCOMPLISHED BY CEMENTING PINS TO THE SURFACE AND BY DEPOSITING A MELT-OUT MATERIAL ON THE SURFACE FOLLOWED BY TWO LAYERS OF EPOXY-RESIN IMPREGNATED GLASS FIBERS. THE STRUCTURE IS HEATED TO MELT OUT THE LOW-MELTING ALLOY.

863-10502 FLUID-PRESSURE METER CAN BE CALIBRATED WITHOUT REMOVAL FROM FLOW LINE
MELTON, D. E. MAR. 1964
M-FS-98

THE CONSTRUCTION OF A FLUID PRESSURE METER WITH TWO INLET PORTS, FLEXIBLE DIAPHRAGMS AND A PRESSURE-RESPONSIVE TRANSDUCER IS DESCRIBED. ONE PORT CAN BE CONNECTED TO THE LINE AND THE OTHER TO A SOURCE OF STANDARD PRESSURES FOR CALIBRATION.

863-10517 MINIATURE OXYGEN-HYDROGEN CUTTING TORCH CONSTRUCTED FROM HYPODERMIC NEEDLE
SHLICHTA, P. APR. 1964
JPL-545

A MINIATURE CUTTING TORCH CONSISTING OF A MAIN BODY MEMBER, UPON WHICH THE HYDROGEN AND OXYGEN CONTAINERS ARE MOUNTED, VALVES FOR CONTROLLING GAS FLOW, AND A HYPODERMIC NEEDLE THAT ACTS AS A MIXING TUBE AND FLAME TIP IS CONSTRUCTED.

863-10519 TOOL FACILITATES SEALING OF METAL FILL TUBES
COOLEY, H. H., JR. /UNITED AIRCRAFT CORP./ JUL. 1964
MSC-24

A HAND TOOL IS DESIGNED FOR SEALING METAL FILL TUBES CONTAINING CORROSIVE OR INFLAMMABLE LIQUIDS WITHOUT THE USE OF HEAT OR OPEN FLAME. THE TOOL ALIGNS THE FILL TUBE INTO WHICH A TAPERED SEALING PIN IS DROPPED AND DRIVEN BELOW THE NECK OF TUBE.

863-10526 BUILT-IN TEMPLATES SPEED UP PROCESS FOR MAKING ACCURATE MODELS
INNOVATOR NOT GIVEN FEB. 1964
LANGLEY-23

FROM ACCURATE SCALE DRAWINGS OF A MODEL, PHOTOGRAPHIC NEGATIVES OF THE CROSS-SECTIONS ARE PRINTED ON THIN SHEETS OF ALUMINUM. THESE CROSS-SECTION IMAGES ARE CUT OUT AND MOUNTED, AND MAHOGANY BLOCKS PLACED BETWEEN THEM. THE WOOD CAN BE WORKED DOWN USING THE ALUMINUM AS A BUILT-IN TEMPLATE.

863-10530 NEW ANEMOMETER HAS FAST RESPONSE, MEASURES DYNAMIC PRESSURE DIRECTLY
LYNCH, J. W. REED, W. H., III OCT. 1964
LANGLEY-28

A SIMPLE ANEMOMETER HAVING A FAST RESPONSE TO HIGH FREQUENCY WIND FLUCTUATIONS BY DIRECT MEASUREMENT OF TWO DRAG-FORCE COMPONENTS IN ORTHOGONAL PLANES IS DESCRIBED. IT MAY BE USED TO DETERMINE WIND PROFILES TO EXTENSIVE HEIGHTS AND WOULD BE HELPFUL IN TAKEOFF AND LANDING OF LIGHT PLANES.

863-10547 ELLIPSOIDAL OPTICAL REFLECTORS REPRODUCED BY ELECTROFORMING
HUNGERFORD, W. J. LARMER, J. W. LEVINSOHN, M. OCT. 1964
GSFC-92

AN ACCURATELY DIMENSIONED CONVEX ELLIPSOIDAL SURFACE, WHICH WILL BECOME A MASTER AFTER POLISHING, IS FABRICATED FROM 316L STAINLESS STEEL. WHEN POLISHING OF THE MASTER IS COMPLETED, IT IS SUSPENDED IN A MODIFIED WATT BATH FOR ELECTROFORMING OF NICKEL REFLECTORS.

863-10556 LATHE CONVERTED FOR GRINDING ASPHERIC SURFACES
LARMER, J. W. LEVINSOHN, M. MC CRAW, D. PESSAGNO, E. H. TAUB, F. J. JUL. 1964
GSFC-115

A STANDARD OVERARM TRACING LATHE CONVERTED BY THE ADDITION OF AN INDEPENDENTLY DRIVEN DIAMOND GRINDING WHEEL IS USED FOR GRINDING ASPHERIC SURFACES. THE MOTION OF THE WHEEL IS CONTROLLED BY THE LATHE AIR TRACER FOLLOWING THE TEMPLATE WHICH PRODUCES THE DESIRED ASPHERIC PROFILE.

863-10558 NEW METHOD FORMS BOND LINE FREE OF VOIDS
KING, C. B. OCT. 1964
LANGLEY-20

A NEW BONDING METHOD USING VACUUM, PRESSURE AND HEAT, WHICH PRODUCES A BOND LINE FREE OF VOIDS, IS DESCRIBED. THIS METHOD IS VERY SUCCESSFUL IN BONDING ABLATION SHIELDS TO A MAGNESIUM STRUCTURAL COMPONENT IN SIMULATED REENTRY TESTS INVOLVING GREAT HEAT AND AIR TURBULENCE.

863-10560 CAMERA SHUTTER IS ACTUATED BY ELECTRIC SIGNAL
NEFF, J. E. NOV. 1964
ARC-20

A ROTARY SOLENOID ENERGIZED BY AN ELECTRIC SIGNAL OPENS A CAMERA SHUTTER AND WHEN THE SOLENOID IS DE-ENERGIZED A SPRING CLOSSES IT. BY THE USE OF A MICROSWITCH, THE SHUTTER MAY BE OPENED & CLOSED IN ONE CONTINUOUS, RAPID OPERATION WHEN THE SOLENOID IS ACTUATED.

863-10564 A TECHNIQUE FOR MAKING ANIMAL RESTRAINTS
CLARKE, A. E., JR. REITMAN, J. SEP. 1964
ARC-25

A CONTOURED SHELL FOR RESTRAINING ANIMALS IS MADE BY THERMOFORMING PLASTIC OVER THE ANESTHETIZED, FROZEN SPECIMEN. IT MAY BE VENTED OR PIECES, MAY BE CUT OUT TO FACILITATE WORKING IN LOCALIZED AREAS.

863-10568 PLASTIC MOLDS REDUCE COST OF ENCAPSULATING ELECTRIC CABLE CONNECTORS
KNOTT, D. NOV. 1964
M-FS-69

RESIN CASTING OF THE ALUMINUM MASTER PATTERN FORMS A PLASTIC MOLD FOR ENCAPSULATING A CABLE CONNECTOR. AN ELASTOMER IS INJECTED INTO THE MOLD AND CURED. THE MOLD IS DISASSEMBLED LEAVING AN ELASTOMERIC ENCAPSULATION AROUND THE CONNECTOR.

863-10571 SELF-BALANCING BEAM PERMITS SAFE, EASY LOAD HANDLING UNDER OVERHANG
EDWARDS, O. H. MAR. 1964
M-FS-84

THE USE OF A SELF-BALANCING I-BEAM WITH A COUNTERWEIGHT AND MOTOR SIMPLIFIES MOVING HEAVY LOADS THAT ARE INACCESSIBLE FOR CRANES. THE BEAM CANNOT BE OVERLOADED AS THE COUNTER WEIGHT WILL NOT BALANCE THE LOAD, AND THUS ACTS AS AN AUTOMATIC SAFETY DEVICE.

B63-10590 STAINLESS-STEEL ELBOWS FORMED BY SPIN FORGING INNOVATOR NOT GIVEN /CHANCE-VOUGHT CORP./ DEC. 1964
M-FS-122

LARGE SEAMLESS AUSTENITIC STAINLESS STEEL ELBOWS ARE FABRICATED BY SPIN FORGING /ROTARY SHEAR FORMING/. A SPECIALLY DESIGNED SPIN FORGING TOOL FOR MOUNTING ON A HYDROSPIN MACHINE HAS BEEN BUILT FOR THIS PURPOSE.

B64-10001 NEW INFLATABLE LIFERAFT IS NONTIPPABLE RADNOSKY, M. I. SHEWMAKE, G. A. MAR. 1964 /SEE NASA-TN-D-1083/
MSC-4A

A ONE-SEALED LIGHTWEIGHT LIFE RAFT HAS THREE UNDERWATER BALLAST BUCKETS AS STABILIZERS. NON-TIPPABLE, IT CAN BE COMPACTLY PACKAGED AND INFLATED WITH CARBON DIOXIDE.

B64-10006 SPEED-SENSING DEVICE AIDS CRANE OPERATORS OCT. 1964
WS-4

SO THAT CRANE OPERATORS CAN JUDGE PAYLOAD MOVEMENTS ACCURATELY, A FRICTION-DRIVEN MULTILOBED CAM DEVICE ENERGIZES A BUZZER AND INDICATOR LAMP IN THE CRANE CAB. THE SIGNAL FREQUENCY OF THIS SPEED SENSOR HAS A SENSITIVITY TO HOIST MOVEMENT OF 1/8 INCH.

B64-10011 METAL STRIP FORMS 21 FOOT BOOM, ROLLS UP FOR COMPACT STORAGE INNOVATOR NOT GIVEN /CANADIAN COMMERCIAL CORP./ MAY 1964
GSFC-151

AN EXTENSIBLE BOOM, CARRYING THREE SEPARATE ELECTRIC CONDUCTOR TAPES, CAN BE ROLLED INTO A COMPACT STORAGE DRUM. THE TAPE IS CURVED IN CROSS SECTION SO THAT THE BOOM AUTOMATICALLY FORMS A TUBE AS IT IS EXTENDED.

B64-10014 GUIDE FOR EXTRUSION DIES ELIMINATES STRAIGHTENING OPERATION GYORGAK, C. A. HOOVER, R. J. NOV. 1964
LEWIS-152

TO PREVENT DISTORTION OF EXTRUDED METAL, A GUIDANCE ASSEMBLY IS ALIGNED WITH THE DIE. AS THE METAL EMERGES FROM THE EXTRUSION DIES, IT PASSES DIRECTLY INTO THE RECEIVER AND STRAIGHTENING TUBE SYSTEM, AND THE COMPLETED EXTRUSION IS WITHDRAWN.

B64-10015 COMFORTABLE, LIGHTWEIGHT SAFETY HELMET HOLDS RADIO TRANSMITTER, RECEIVER ATLAS, N. D. /N. AM. AVIATION, INC./ MAY 1964
MSC-53

FOR TWO-WAY RADIO COMMUNICATION WHERE SAFETY GEAR IS REQUIRED, A LIGHTWEIGHT HELMET WITH FEW PROTRUSIONS HAS BEEN DESIGNED. THE ELECTRONICS COMPONENTS AND POWER SUPPLY ARE MOUNTED BETWEEN THE INNER AND OUTER SHELL, AND RESILIENT PADDING IS USED FOR THE LINING.

B64-10021 PRESSURE TRANSDUCER 3/8-INCH IN SIZE CAN BE FAIRED INTO SURFACE SCHAFFER, R. J. /N. AM. AVIATION, INC./ MAY 1964
WOO-065

TO MEASURE FLUID PRESSURE WITH MINIMUM DISTURBANCE TO FLUID FLOW, A MINIATURE PRESSURE

TRANSDUCER CAN BE IMBEDDED AND FAIRED INTO THE TEST SURFACE. INCORPORATED IN THE DESIGN ARE PIEZORESISTIVE ELEMENTS, MOUNTED ON A DIAPHRAGM, WHICH TRANSFORM PRESSURE STRAINS INTO AN ELECTRICAL SIGNAL.

B64-10028 QUICK-ACTING CLUTCH DISENGAGES IDLE DRIVE MOTOR STARK, K. W. AUG. 1964
GSFC-143

POSITIVE-DRIVE, NO DRAG, OVER-RUNNING CLUTCH IS DEVELOPED TO CONSERVE POWER OF IDLE MOTOR IN A LOW-POWER SYSTEM USING MULTIPLE DRIVE MOTORS. THIS DEVICE IS USEFUL WHERE A NUMBER OF SHAFT SPEEDS ARE REQUIRED WITH FREQUENT SHIFTING.

B64-10031 MULTIPLE PORT PRESSURE SCANNER VALVE FEATURES GREATER ACCURACY, QUICKER DATA VINCENT, E. R. SEP. 1964
JPL-555

A FAST, ACCURATE, MULTIPRESSURE MEASURING SYSTEM, WHICH EMPLOYS A MULTIPLE PORT PRESSURE SCANNING VALVE THAT CONNECTS A PRESSURE TRANSDUCER TO MANY PRESSURES, IS DESCRIBED.

B64-10050 MODIFIED GAS BEARING IS ADJUSTABLE TO OPTIMUM STIFFNESS RATIO EVANS, J. L. AUG. 1964
M-FS-145

INEXPENSIVE AND RAPID-ADJUSTMENTS OF THE RADIAL-TO-AXIAL STIFFNESS RATIO OF A SPHERICAL GAS BEARING ARE ACHIEVED BY A SERIES OF GAS PASSAGES IN THE EQUATORIAL PLANE OF THE SPHERE WHICH FEED INTO ORIFICES THAT CAN BE READILY CHANGED IN SIZE.

B64-10058 INSULATED WELD TOOLING PERMITS UNIFORM, HIGH-QUALITY WELD INNOVATOR NOT GIVEN /N. AM. AVIATION/ AUG. 1964
MSC-42

THE APPLICATION OF A CERAMIC MATERIAL COATING TO ALL SURFACES CONTACTING PARTS TO BE WELDED PERMITS GREATER WELD STRENGTH THAN THE CONVENTIONAL WELD TOOLING METHOD.

B64-10066 ENCAPSULATION PROCESS STERILIZES AND PRESERVES SURGICAL INSTRUMENTS MONTGOMERY, L. C. MORELLI, F. A. JUL. 1964
JPL-484

ETHYLENE OXIDE IS BLENDED WITH AN ORGANIC POLYMER TO FORM A STERILE MATERIAL FOR ENCAPSULATING SURGICAL INSTRUMENTS. THE MATERIAL DOES NOT BOND TO METAL AND CAN BE EASILY REMOVED WHEN THE INSTRUMENTS ARE NEEDED.

B64-10069 METAL-BENDING BRAKE FACILITATES LIGHTWEIGHT, CLOSE-TOLERANCE FABRICATION ERCOLINE, A. L. WILTON, K. B. OCT. 1964
ARC-29

A LIGHTWEIGHT, METAL BENDING BRAKE ENSURES VERY ACCURATE BENDS. FEATURES OF THE BRAKE THAT ADAPT IT FOR MAKING COMPLEX REVERSE BENDS TO CLOSE TOLERANCES ARE A PRONOUNCED RELIEF OR CUTAWAY OF THE UNDERSIDE OF THE BODYPLATE COMBINED WITH MODIFICATION IN THE LEAF DESIGN AND ITS SUSPENSION.

B64-10084 MOLDED ELESTOMER PROVIDES COMPACT FERRITE-CORE HOLDER, SIMPLIFIES ASSEMBLY HAYDEN, R. R. NOV. 1964
JPL-584

A FERRITE-CORE HOLDER, FABRICATED BY CASTING AN ELASTOMER IN A SIMPLE MOLD, SIMPLIFIES THE ASSEMBLY OF MODULAR MATRIX UNITS FOR COMPUTERS. USE OF THE DEVICE PERMITS THE CORE LEADS TO BE MULTIPLY THREADED AND SOLDERED TO TERMINALS, WITHOUT REQUIRING INTERMEDIATE TERMINALS.

B64-10119 BUCKLE JOINS WEB STRAPS QUICKLY, ADJUSTS EASILY
WILKINSON, J. E. /CHANCE VUGHT CORP./ JUN. 1964
LANGLEY-21

TO JOIN WEB STRAPS USED TO HOIST HEAVY LOADS, A NOVEL BUCKLE PERMITS TWO STRAPS TO BE QUICKLY JOINED AND HELD BY THE COMBINED FORCES OF STRAP LOAD TENSION AND FRICTION.

B64-10121 ELECTRONIC ASSEMBLY RACK PANELS SNAP ON AND OFF
BAILEY, J. W. JUN. 1964
GSFC-59

SNAP FASTENERS ON EACH SIDE OF AN ELECTRONIC ASSEMBLY RACK BLANK PANEL GIVE QUICK ACCESS TO THE INTERIOR. GUIDE PINS EXTENDING FROM THE INSIDE FACE EASILY SLIP INTO STANDARD SCREW HOLES ON THE FRAME AND PROVIDE ADDITIONAL SUPPORT.

B64-10124 ATTACHMENT CONVERTS MICROSCOPE TO POINT SOURCE AUTOCOLLIMATOR
SHLICHTA, P. J. JUL. 1964
JPL-499

A LOW-POWER MICROSCOPE OR TELESCOPE PROVIDES A SIMPLE MEANS OF AUTOCOLLIMATION. THIS IS DONE BY FITTING THE INSTRUMENT WITH A LIGHT SOURCE TO PERMIT ALIGNMENT FROM A REFLECTING SURFACE NORMAL TO THE OPTIC AXIS OF THE INSTRUMENT.

B64-10130 BEARING TRANSMITS ROTARY AND AXIAL MOTION
DOW, N. F. PETERS, R. W. SEP. 1964
LANGLEY-27

A LOW FRICTION, TWO-COMPONENT BEARING COMPRISED OF A PAIR OF BALL-BEARING RACES FOR TRANSMITTING ROTARY MOTION AND AN INNER SERIES OF BALL BEARING ASSEMBLIES FOR TRANSMITTING AXIAL MOTION IS DESCRIBED AND SHOULD BE USEFULL IN MECHANISMS SUCH AS STRESS-STRAIN TESTING MACHINES.

B64-10141 PNEUMATIC POWER IS TRANSMITTED THROUGH AIR BEARING
JOHNSON, H. I. WOBIG, O. A. JUL. 1964
MSC-8

A MORE EFFICIENT METHOD FOR SUPPLYING HIGH PRESSURE AIR TO AN AIR BEARING AND PNEUMATIC EQUIPMENT MOUNTED ON IT HAS BEEN DEVELOPED. THE SYSTEM USES A CONVENTIONAL AIR BEARING AND AN AIR-SUPPORTED SPHERE WITH A CENTRAL PASSAGE. HIGH PRESSURE AIR IS CHanneled THROUGH IT INTO THE PNEUMATIC EQUIPMENT ON THE SPHERE.

B64-10145 FLEXIBLE FASTENER ALLOWS THERMAL EXPANSION
CRUMPLER, W. B. JUN. 1964
LANGLEY-40

A FLEXIBLE FASTENER PERMITS THERMAL EXPANSION OF MODEL SKIN SECTIONS WHICH ARE RIGIDLY ATTACHED TO SUPPORTING STRUCTURES IN WIND TUNNEL TESTS. THE DEVICE USES A MODIFIED BALL JOINT CONTACT BETWEEN THE FASTENER AND A SKIN SECTION.

B64-10164 UPSETTING BUTT EDGE INCREASES WELD-JOINT STRENGTH
VESCO, D. OCT. 1964
M-FS-175

MECHANICAL UPSETTING /A MODE OF COLD FORGING/ OF BUTT EDGES TO BE WELDED IS ACCOMPLISHED BY THE USE OF HYDRAULIC RAMS AND PRESSURE ROLLERS. THE MECHANICAL UPSETTING INCREASES THE THICKNESS OF THE MATERIAL IN THE HEAT-AFFECTED ZONE AND COMPENSATES FOR THE LOWER SPECIFIC STRENGTH PER UNIT THICKNESS COMMON TO THIS AREA.

B64-10170 BALL BEARING USED IN DESIGN OF RUGGED FLOW-METER

MINKIN, H. L. JAN. 1965
LEWIS-159

A VOLUMETRIC FLOWMETER WHICH HAS A SMALL MAGNET IMBEDDED IN THE OUTER PERIMETER OF THE TURBINE WHEEL OR IN THE BEARING PERMITS MEASUREMENT OF LIQUID FLOW RATES IN THE PRESENCE OF WIDE RANGES AND VIOLENT SURGES.

B64-10178 MACHINE TESTS CREASE DURABILITY OF SHEET MATERIALS
JONES, L. K. STANFORD, H. B. NOV. 1964
JPL-604

TO TEST THE CREASE RESISTANCE OF SHEET MATERIALS, THE MID-SECTION IS FOLDED OVER CREASE-CONTROL BLADES. ONE END IS CLAMPED TO A MOTOR-DRIVEN ECCENTRIC, THE OTHER TO A SPRING, AND DURABILITY IS MEASURED BY THE CYCLES REQUIRED TO PRODUCE FAILURE.

B64-10185 THREADING HOOK FACILITATES SAFE RECOVERY OF HEAVY LOADS
ARTHUR, J. S. WILLIAMS, D. C. OCT. 1964
MSC-46

A C-SHAPED THREADING HOOK AND SHUTTLE MOUNTED ON A SPRING-LOADED DRIVING ROD LOCATED INSIDE THE LONG-HANDLED POLE IS DEVELOPED FOR RECOVERING MASSIVE LOADS AFLOAT IN THE SEA.

B64-10188 BLADE VALVE ISOLATES COMPARTMENT IN PIPE, OPENS TO ALLOW FREE FLOW
IMUS, R. NOV. 1964
JPL-585

TWO THIN BLADES ARE INCORPORATED INTO A VALVE WHICH, WHEN CLOSED, FORM A SEALED COMPARTMENT IN THE SHOCK-TUBE PORTION OF A PIPELINE. WHEN FORCED OPEN BY AN ACTUATOR, GAS FLOWS THROUGH THE SYSTEM.

B64-10211 MICROMACHINING PRODUCES OPTICAL APERTURES TO MICRON DIMENSIONS
WALCH, A. J. OCT. 1964
GSFC-206

A MICRON DIMENSIONED RECTANGULAR OPTICAL APERTURE IS FORMED UNDER A HIGH-POWERED TOOLMAKER'S MICROSCOPE BY LAYING TWO KNIFE-EDGED BLOCKS OVER THE MINIATURE KNIFE-EDGED HOLE IN THE BASE.

B64-10223 TWO-PART VALVE ACTS AS QUICK COUPLING
MAC GLASHAN, W. F., JR. NOV. 1964
JPL-478

A TWO-PART VALVE SIMPLIFIES THE PROBLEM OF FILLING LARGE TANKS FROM SMALLER ONES. ONE PART ACTS AS A CHECK VALVE AND REMAINS INTEGRAL TO THE RECIPIENT SYSTEM, WHILE THE OTHER PART IS INTEGRAL TO THE DONOR SYSTEM.

B64-10249 INSTRUMENT ADJUSTMENT KNOB LOCKS TO PREVENT ACCIDENTAL MALADJUSTMENT
INNOVATOR NOT GIVEN /LEAR SIEGLER CORP./ NOV. 1964
M-FS-190

A DEVICE, INCORPORATING A COLLAR WITH A HEXAGONAL OPENING WHICH FITS SNUGLY OVER A HEXAGONAL NUT USED TO ENGAGE INSTRUMENT PANEL COMPONENTS, KEEPS THE ADJUSTMENT KNOB LOCKED. A QUICK RELEASE MECHANISM FREES THE KNOB FOR ROTATIONAL ADJUSTMENT.

B64-10272 VISCOUS-PENDULUM DAMPER SUPPRESSES STRUCTURAL VIBRATIONS
REED, W. H., III NOV. 1964
LANGLEY-45

THE VISCOUS PENDULUM DAMPER CONSISTS OF A

01-05 MECHANICAL

CYLINDER CONTAINING ROUND TRAYS ON WHICH ROUND LEAD SLUGS REST. WHEN ASSEMBLED, THE CONTAINER IS FILLED WITH A VISCOUS LIQUID AND ATTACHED, WITH AXIS VERTICAL, TO THE STRUCTURE. THE DEVICE PERMITS VARYING THE DAMPING OF STRUCTURAL VIBRATIONS.

B64-10274 VEHICLE WALKS ON VARIED TERRAIN, CAN ASSIST HANDICAPPED PERSONS
NOV. 1964
WOO-005 WOO-005

A BATTERY-POWERED MOTORIZED VEHICLE WITH THREE PAIRS OF LEGS CONNECTED TO PUSH RODS AND A SERIES OF LINKAGES IS CONSTRUCTED FOR TRAVERSING VARIED TERRAINS. TWO CAMS CONNECTED TO THE DRIVE MECHANISM CONTROL THE MOTION OF THE LEGS. THE BASIC DESIGN MAY BE ADAPTED FOR USE WITH MOTORIZED WHEELCHAIRS.

B64-10277 APPARATUS ALTERS POSITION OF OBJECTS TO FACILITATE DEMAGNETIZATION
RINARD, G. WATSON, J. D. NOV. 1964
GSFC-234

AN APPARATUS CONSISTING OF PULLEYS, A DRIVE SHAFT AND AN INNER COMPARTMENT, IN WHICH COMPONENTS TO BE DEMAGNETIZED ARE MOUNTED, IS CONSTRUCTED. DUE TO THE SPEED RATIO OF THE THREE FRAMES, EVERY POINT ON A COMPONENT IN THE INNER COMPARTMENT IS CYCLED THROUGH AN OPTIMUM LOCUS IN THE DEMAGNETIZATION FIELD.

B64-10278 SENSITIVE LOW-PRESSURE RELIEF VALVE HAS POSITIVE SEATING AGAINST LEAKAGE
INNOVATOR NOT GIVEN /N. AM. AVIATION INC./ NOV. 1964
WOO-041

A PILOT-OPERATED RELIEF VALVE WHICH PROVIDES POSITIVE SEATING AGAINST LEAKAGE IN CRYOGENIC SYSTEMS IS DESCRIBED. THE PRINCIPAL ADVANTAGE IS THAT THE PILOT POPPET IS UNAFFECTED BY VARIATIONS IN CONTROL PRESSURES IN THE PILOT CAVITY, AND RESULTS IN A MORE ACCURATE SENSING OF INLET PRESSURE CONDITIONS.

B64-10284 APPARATUS MEASURES VERY SMALL THRUSTS
INNOVATOR NOT GIVEN /HUGHES AIRCRAFT CO./ NOV. 1964
WOO-048

MEASUREMENT OF VERY SMALL THRUSTS OF AN ION ENGINE ARE MADE BY MOUNTING THE ENGINE ON A PLATFORM SUPPORTED BY LEAF SPRINGS WHICH ARE LOADED TO HAVE A ZERO SPRING CONSTANT. MEASURING APPARATUS INCLUDES AN INDUCTIVE SENSOR, SERVO AMPLIFIER, AND A COUNTERTHRUST FEEDBACK SYSTEM.

B64-10306 COMPRESSED GAS SYSTEM OPERATES SEMITRAILER BRAKES DURING WINCHING OPERATION
TUPPER, W. E. DEC. 1964
JPL-0036

TO MOVE VAN-TYPE SEMI-TRAILERS INTO AND OUT OF CONFINED SPACES, AN AUXILIARY BRAKING SYSTEM IS MOUNTED ON A STANDARD DOLLY CONVERTER. COMPRESSED NITROGEN IS USED TO ACTUATE THE BRAKES WHICH ARE USED IN CONJUNCTION WITH A POWER WINCH.

B64-10327 CONNECTOR SEALS FLUID LINES AT CRYOGENIC TEMPERATURES AND HIGH VACUUMS
KITTS, W. T. PLATT, P. K. JAN. 1965
GSFC-253

A CONNECTOR THAT WILL SERVE AS A SEAL FOR FLUIDS AT CRYOGENIC TEMPERATURES AND IN HIGH VACUUMS WAS CONSTRUCTED BY INSTALLING A METAL DISK BETWEEN TWO SETS OF MATING SERRATIONS TO FORM TWO SEALING SURFACES. COMPRESSION ON BOTH SEALING SURFACES IS ENSURED BY SPRING ACTION OF THE DISK.

B64-10348 SAFETY RESTRAINER PREVENTS WHIPPING OF RUPTURED HIGH-PRESSURE HOSE
THOMPSON, W. E. DEC. 1964
LEWIS-99

THE BRAID AT EACH END OF A STANDARD ELECTRIC CABLE PULLER IS MODIFIED TO REINFORCE HIGH PRESSURE, FLEXIBLE, FLUID TRANSFER HOSES. THIS SAFETY DEVICE ACTS AS A RESTRAINT IF THE LINE RUPTURES.

B64-10406 POLYCHART CONTOUR PLOTTER ENABLES DATA EXTRA-POLATION FROM MULTIPLE PLOTTING CHARTS
SWINDALL, P. M. WISE, T. E. JUL. 1964
M-FS-37

A POLYCHART CONTOUR PLOTTER IS USED TO REDUCE THE DATA FROM ALL 19 ANTENNA PATTERN CHARTS TO A ONE-CHART FORM.

Subject Index

The title of the Tech Brief appears under each subject heading; it is listed under several subject headings to provide multiple access to the subject content. The Tech Brief number is located under and to the right of the title (e.g. B63-10023), followed by a four digit number (e.g. 01-05) for locating the citation in the first section. The first two digits identify this as the first issue of *Index to NASA Tech Briefs* and the two digits following the hyphen identify the subject category.

A

ABSORBER

KINETIC-ENERGY ABSORBER EMPLOYS FRICTIONAL FORCE BETWEEN MATING CYLINDERS
LEWIS-75 B63-10442 01-05

ACCELERATION

LOW-COST TAPE SYSTEM MEASURES VELOCITY OF ACCELERATION
GSFC-85 B63-10512 01-01

ACCUMULATOR

HIGH-PRESSURE REGULATING SYSTEM PREVENTS PRESSURE SURGES
JPL-231 B63-10170 01-05

ACETYLENE

MINIATURE OXYGEN-HYDROGEN CUTTING TORCH CONSTRUCTED FROM HYPODERMIC NEEDLE
JPL-545 B63-10517 01-05

ACTUATOR

STEPPING SWITCH WITH SIMPLE ACTUATOR PROVIDES MANY CONTACTS IN SMALL SPACE
JPL-122 B63-10118 01-01

ADDITIVE

QUICK-HARDENING PROBLEMS ARE ELIMINATED WITH SPRAY GUN MODIFICATION WHICH MIXES RESIN AND ACCELERATOR LIQUIDS DURING APPLICATION
LANGLEY-6A B63-10318 01-03

AIR

RAPID HELIUM-AIR ANALYZER CAN MEASURE OTHER BINARY GAS MIXTURES
LANGLEY-16 B63-10557 01-03

DEVICE INDUCES LUNGS TO MAINTAIN KNOWN CONSTANT PRESSURE
MSC-50 B64-10108 01-04

PNEUMATIC POWER IS TRANSMITTED THROUGH AIR BEARING
MSC-8 B64-10141 01-05

AIR PURIFICATION

GAS DIFFUSION CELL REMOVES CARBON DIOXIDE FROM OCCUPIED AIRTIGHT ENCLOSURES
MSC-118 B64-10319 01-03

ALIGNMENT

DESIGN OF VALVE PERMITS SEALING EVEN IF THE

STEM IS MISALIGNED
LEWIS-38

B63-10341 01-05

NOVEL CLAMPS ALIGN LARGE ROCKET CASES, ELIMINATE BACK-UP BARS
M-FS-1

B63-10376 01-05

MIRROR DEVICE ALIGNS MACHINE SURFACE PERPENDICULAR TO SIGHT LINES
WOO-5

B63-10421 01-02

GUIDE FOR EXTRUSION DIES ELIMINATES STRAIGHTENING OPERATION
LEWIS-152

B64-10014 01-05

ATTACHMENT CONVERTS MICROSCOPE TO POINT SOURCE AUTOCOLLIMATOR
JPL-499

B64-10124 01-05

ALLOY

INTEGRAL COOLANT CHANNELS SIMPLY MADE BY MELT-OUT METHOD
M-FS-91

B63-10497 01-05

ALTERNATING CURRENT GENERATOR

NEW LOW-LEVEL A-C AMPLIFIER PROVIDES ADJUSTABLE NOISE CANCELLATION AND AUTOMATIC TEMPERATURE COMPENSATION
ARC-2

B63-10003 01-04

ALUMINUM

CHAIN FRICTION SYSTEM GIVES POSITIVE, REVERSIBLE DRIVE
ARC-8

B63-10009 01-05

HELICAL TUBE SEPARATES NITROGEN GAS FROM LIQUID NITROGEN
JPL-398

B63-10251 01-05

PORTABLE FLOORING PROTECTS FINISHED SURFACES, IS EASILY MOVED
M-FS-15

B63-10387 01-05

BUILT-IN TEMPLATES SPEED UP PROCESS FOR MAKING ACCURATE MODELS
LANGLEY-23

B63-10526 01-05

STRINGENT CLEANING TECHNIQUE ASSURES RELIABLE EPOXY BOND
GSFC-161

B64-10142 01-03

ALUMINUM OXIDE

GATE VALVE WITH CERAMIC-COATED BASE OPERATES AT HIGH TEMPERATURES
ARC-23

B63-10562 01-03

AMPLIFIER

TRANSFLUXOR CIRCUIT AMPLIFIES SENSING CURRENT FOR COMPUTER MEMORIES
JPL-406

B63-10255 01-01

IMPROVED VARIABLE-RELUCTANCE TRANSDUCER MEASURES TRANSIENT PRESSURES
LANGLEY-10

B63-10321 01-01

DIGITAL LOGIC ELEMENTS PROVIDE ADDITIONAL FUNCTIONS FROM ANALOG INPUT
MSC-64

B64-10064 01-01

IMPROVED INSERTION-LOSS TESTER
JPL-358

B64-10080 01-01

FIELD-EFFECT TRANSISTOR IMPROVES ELECTROMETER AMPLIFIER
ARC-36

B64-10143 01-01

AMPLITUDE

SUBJECT INDEX

AMPLITUDE
 DEVICE CALIBRATES VIBRATION TRANSDUCERS AT AMPLITUDES UP TO 20G.
 M-FS-86 863-10572 01-01

ANALOG DATA
 DIGITAL LOGIC ELEMENTS PROVIDE ADDITIONAL FUNCTIONS FROM ANALOG INPUT
 MSC-64 864-10064 01-01

ANALOG SIMULATION
 ANALOG DEVICE SIMULATES PHYSIOLOGICAL WAVEFORMS
 MSC-51 864-10109 01-01

ANALOG-TO-DIGITAL CONVERTER
 PNEUMOTACHOMETER COUNTS RESPIRATION RATE OF HUMAN SUBJECT
 MSC-92 864-10259 01-01

ANEMOMETER
 NEW ANEMOMETER HAS FAST RESPONSE, MEASURES DYNAMIC PRESSURE DIRECTLY
 LANGLEY-28 863-10530 01-05

ANIMAL STUDY
 A TECHNIQUE FOR MAKING ANIMAL RESTRAINTS
 ARC-25 863-10564 01-05

APERTURE
 MICROMACHINING PRODUCES OPTICAL APERTURES TO MICRON DIMENSIONS
 GSFC-206 864-10211 01-05

ARITHMETIC AND LOGIC UNIT /ALU/
 TRANSFLUXOR CIRCUIT AMPLIFIES SENSING CURRENT FOR COMPUTER MEMORIES
 JPL-406 863-10255 01-01

AUTOMATIC CONTROL
 NEW LOW-LEVEL A-C AMPLIFIER PROVIDES ADJUSTABLE NOISE CANCELLATION AND AUTOMATIC TEMPERATURE COMPENSATION
 ARC-2 863-10003 01-04

LEVEL OF SUPER-COLD LIQUIDS AUTOMATICALLY MAINTAINED BY LEVELOMETER
 JPL-397 863-10250 01-01

UNMANNED SEISMOMETER LEVELS SELF, CORRECTS DRIFT ERRORS
 GSFC-100 863-10551 01-01

AXIAL STRESS
 BEARING TRANSMITS ROTARY AND AXIAL MOTION
 LANGLEY-27 864-10130 01-05

B

BALL BEARING
 BALL BEARING USED IN DESIGN OF RUGGED FLOW-METER
 LEWIS-159 864-10170 01-05

BANDWIDTH
 BANDWIDTH SWITCHING IS TRANSIENT-FREE, AVOIDS LOSS OF LOOP LOCK
 WOO-054 864-10349 01-01

BAR
 NOVEL CLAMPS ALIGN LARGE ROCKET CASES, ELIMINATE BACK-UP BARS
 M-FS-1 863-10376 01-05

VACUUM-TYPE BACKUP BAR SPEEDS WELD REPAIRS
 M-FS-12 863-10384 01-05

MOUNTING FOR DIODES PROVIDES EFFICIENT HEAT SINK
 M-FS-197 864-10283 01-01

BEARING
 DEVICE TRANSMITS ROTARY MOTION THROUGH HERMETICALLY SEALED WALL
 JPL-303 863-10198 01-05

GALLIUM USEFUL BEARING LUBRICANT IN HIGH-VACUUM ENVIRONMENT
 LEWIS-12 863-10337 01-03

MOLYBDENUM DISULFIDE MIXTURES MAKE EFFECTIVE HIGH-VACUUM LUBRICANTS
 M-FS-54 863-10453 01-03

LEAD OXIDE CERAMIC MAKES EXCELLENT HIGH-TEMPERATURE LUBRICANT
 LEWIS-144 864-10116 01-03

BEARING TRANSMITS ROTARY AND AXIAL MOTION
 LANGLEY-27 864-10130 01-05

PNEUMATIC POWER IS TRANSMITTED THROUGH AIR BEARING
 MSC-8 864-10141 01-05

BELLOWS
 DEVICE TRANSMITS ROTARY MOTION THROUGH HERMETICALLY SEALED WALL
 JPL-303 863-10198 01-05

COMPOSITE, VACUUM-JACKETED TUBING REPLACES BELLOWS IN CRYOGENIC SYSTEMS
 LEWIS-67 863-10368 01-05

FILLER DEVICE FOR HANDLING HOT CORROSIVE MATERIALS
 MSC-85 864-10166 01-03

BENDING FATIGUE
 MACHINE TESTS CREASE DURABILITY OF SHEET MATERIALS
 JPL-604 864-10178 01-05

BENDING MOMENT
 METAL-BENDING BRAKE FACILITATES LIGHTWEIGHT, CLOSE-TOLERANCE FABRICATION
 ARC-29 864-10069 01-05

BERYLLIUM OXIDE
 INDIUM FOIL WITH BERYLLIA WASHER IMPROVES TRANSISTOR HEAT DISSIPATION
 GSFC-42 863-10033 01-01

BILLET
 RAPID BILLET LOADER AIDS EXTRUSION OF REFRACTORY METALS
 LEWIS-50 863-10354 01-05

BINARY MIXTURE
 RAPID HELIUM-AIR ANALYZER CAN MEASURE OTHER BINARY GAS MIXTURES
 LANGLEY-16 863-10557 01-03

BIOINSTRUMENTATION
 NEW LOW-LEVEL A-C AMPLIFIER PROVIDES ADJUSTABLE NOISE CANCELLATION AND AUTOMATIC TEMPERATURE COMPENSATION
 ARC-2 863-10003 01-04

IMPROVED ELECTRODE GIVES HIGH-QUALITY BIOLOGICAL RECORDINGS
 MSC-17 864-10025 01-04

DEVICE INDUCES LUNGS TO MAINTAIN KNOWN CONSTANT PRESSURE
 MSC-50 864-10108 01-04

SUBMINIATURE BIOTELEMETRY UNIT PERMITS REMOTE PHYSIOLOGICAL INVESTIGATIONS
 ARC-39 864-10171 01-01

BLACK BODY RADIATION
 REFERENCE BLACK BODY IS COMPACT, CONVENIENT TO USE
 ARC-3 863-10004 01-03

BLADE
 BLADE VALVE ISOLATES COMPARTMENT IN PIPE, OPENS TO ALLOW FREE FLOW
 JPL-585 864-10188 01-05

BLOWER
 COMPOSITE, VACUUM-JACKETED TUBING REPLACES BELLOWS IN CRYOGENIC SYSTEMS
 LEWIS-67 863-10368 01-05

BONDING
 NEW METHOD FORMS BOND LINE FREE OF VOIDS
 LANGLEY-20 863-10558 01-05

SUBJECT INDEX

CIRCUIT

ELASTOMERS BONDED TO METAL SURFACES SEAL
ELECTROCHEMICAL CELLS
GSFC-168 B64-10113 01-03

BOOLEAN ALGEBRA
VEITCH DIAGRAM PLOTTER SIMPLIFIES BOOLEAN
FUNCTIONS
JPL-385 B63-10241 01-05

BOOM
APPARATUS OF SMALL SIZE CAN BE EXTENDED INTO
LONG, RIGID BOOM
JPL-305 B63-10200 01-05

METAL STRIP FORMS 21 FOOT BOOM, ROLLS UP FOR
COMPACT STORAGE
GSFC-151 B64-10011 01-05

BRAKE
FRICTIONAL WEDGE SHOCK MOUNT IS INEXPENSIVE,
HAS GOOD DAMPING CHARACTERISTICS
JPL-IT-1001 B63-10289 01-05

METAL-BENDING BRAKE FACILITATES LIGHTWEIGHT,
CLOSE-TOLERANCE FABRICATION
ARC-29 B64-10069 01-05

COMPRESSED GAS SYSTEM OPERATES SEMITRAILER
BRAKES DURING WINCHING OPERATION
JPL-0036 B64-10306 01-05

C

CALIBRATION
VARIABLE LIGHT SOURCE WITH A MILLION-TO-ONE
INTENSITY RATIO
JPL-W00-008 B63-10424 01-03

FLUID-PRESSURE METER CAN BE CALIBRATED WITHOUT
REMOVAL FROM FLOW LINE
M-FS-98 B63-10502 01-05

DEVICE CALIBRATES VIBRATION TRANSDUCERS AT
AMPLITUDES UP TO 20G.
M-FS-86 B63-10572 01-01

ATTACHMENT CONVERTS MICROSCOPE TO POINT SOURCE
AUTOCOLLIMATOR
JPL-499 B64-10124 01-05

RASTER LINEARITY OF VIDEO CAMERAS CALIBRATED
WITH PRECISION TESTER
GSFC-200 B64-10209 01-01

CAMERA SHUTTER
ELECTROMECHANICALLY OPERATED CAMERA SHUTTER
PROVIDES UNIFORM EXPOSURE
JPL-357 B63-10227 01-01

CAMERA SHUTTER IS ACTUATED BY ELECTRIC SIGNAL
ARC-20 B63-10560 01-05

CAPACITOR
IMPROVED SENSOR COUNTS MICROMETEOROID
PENETRATIONS
LEWIS-76 B63-10443 01-01

CIRCUIT SWITCHES LATCHING RELAY IN RESPONSE TO
SIGNALS OF DIFFERENT POLARITY
W00-055 B63-10508 01-01

HIGHLY EFFICIENT SQUARE-WAVE OSCILLATOR OPER-
ATOR AT HIGH POWER LEVELS
GSFC-112 B63-10554 01-01

CARBON DIOXIDE
GAS DIFFUSION CELL REMOVES CARBON DIOXIDE FROM
OCCUPIED AIRTIGHT ENCLOSURES
MSC-118 B64-10319 01-03

CARDIOGRAPHY
DIGITAL CARDIOMETER COMPUTES AND DISPLAYS
HEARTBEAT RATE
MSC-93 B64-10258 01-01

CASE
COMPACT CARTRIDGE DRIVES CODED TAPE AT
CONSTANT READOUT SPEED
JPL-472 B64-10222 01-01

CASTING
REFRACTORY CERAMIC HAS WIDE USAGE, LOW
FABRICATION COST
M-FS-67 B63-10481 01-03

PLASTIC MOLDS REDUCE COST OF ENCAPSULATING
ELECTRIC CABLE CONNECTORS
M-FS-69 B63-10568 01-05

PRESSURE MOLDING OF POWDERED MATERIALS
IMPROVED BY RUBBER MOLD INSERT
W00-100 B64-10270 01-03

CATALYTIC ACTIVITY
CRYOPUMPING OF HYDROGEN IN VACUUM CHAMBERS IS
AIDED BY CATALYTIC OXIDATION OF HYDROGEN
LEWIS-15 B63-10340 01-05

CAVITY
SENSITIVE LOW-PRESSURE RELIEF VALVE HAS
POSITIVE SEATING AGAINST LEAKAGE
W00-041 B64-10278 01-05

CENTRIFUGAL FORCE
HELICAL TUBE SEPARATES NITROGEN GAS FROM
LIQUID NITROGEN
JPL-398 B63-10251 01-05

CERAMIC BONDING
MOUNTING FOR DIODES PROVIDES EFFICIENT HEAT
SINK
M-FS-197 B64-10283 01-01

CERAMIC COATING
GATE VALVE WITH CERAMIC-COATED BASE OPERATES
AT HIGH TEMPERATURES
ARC-23 B63-10562 01-03

CERAMICS
REFRACTORY CERAMIC HAS WIDE USAGE, LOW
FABRICATION COST
M-FS-67 B63-10481 01-03

LEAD OXIDE CERAMIC MAKES EXCELLENT HIGH-
TEMPERATURE LUBRICANT
LEWIS-144 B64-10116 01-03

CESIUM IODIDE
CESIUM IODIDE CRYSTALS FUSED TO VACUUM TUBE
FACEPLATES
GSFC-67 B63-10476 01-03

CHANNEL
INTEGRAL COOLANT CHANNELS SIMPLY MADE BY MELT-
OUT METHOD
M-FS-91 B63-10497 01-05

CHASSIS
MODULAR CHASSIS SIMPLIFIES PACKAGING AND
INTERCONNECTING OF CIRCUIT BOARDS
JPL-236A B63-10174 01-01

CIRCUIT
CIRCUIT SWITCHES LATCHING RELAY IN RESPONSE TO
SIGNALS OF DIFFERENT POLARITY
W00-055 B63-10508 01-01

FREQUENCY-SHIFT-KEYER CIRCUIT IMPROVES PCM
CONVERSION FOR RADIO TRANSMISSION
GSFC-80 B63-10511 01-01

COMPUTER CIRCUIT WILL FIT ON SINGLE SILICON
CHIP
JPL-513 B63-10514 01-01

SIMPLE CIRCUIT PROVIDES ADJUSTABLE VOLTAGE
WITH LINEAR TEMPERATURE VARIATION
JPL-W00-029 B63-10537 01-01

TRANSISTORIZED TRIGGER CIRCUIT IS FREQUENCY-
CONTROLLABLE
GSFC-111 B63-10553 01-01

SIMPLE CIRCUIT CONTINUOUSLY MONITORS
THERMOCOUPLE SENSOR
M-FS-61 B63-10567 01-01

CIRCUIT CONTROLS TRANSIENTS IN SCR INVERTERS
GSFC-120 B63-10600 01-01

CIRCUIT BOARD

SUBJECT INDEX

MONOSTABLE CIRCUIT WITH TUNNEL DIODE HAS FAST RECOVERY GSFC-132	B63-10603	01-01	TRANSFLUXOR CIRCUIT AMPLIFIES SENSING CURRENT FOR COMPUTER MEMORIES JPL-406	B63-10255	01-01
TEMPERATURE-SENSITIVE NETWORK DRIVES ASTABLE MULTIVIBRATOR GSFC-137	B63-10609	01-01	COMPUTER CIRCUIT WILL FIT ON SINGLE SILICON CHIP JPL-513	B63-10514	01-01
CIRCUIT RELIABILITY BOOSTED BY SOLDERING PINS OF DISCONNECT PLUGS TO SOCKETS JPL-447	B64-10002	01-01	NEW SINTERING PROCESS ADJUSTS MAGNETIC VALUE OF FERRITE CORES GSFC-129	B63-10606	01-01
LOW-POWER TRANSISTORIZED CIRCUIT PROVIDES STAIRCASE WAVEFORM GSFC-48	B64-10007	01-01	MOLDED ELESTOMER PROVIDES COMPACT FERRITE-CORE HOLDER, SIMPLIFIES ASSEMBLY JPL-584	B64-10084	01-05
EFFICIENT CIRCUIT TRIGGERS HIGH-CURRENT, HIGH-VOLTAGE PULSES MSC-14	B64-10024	01-01	CONDUCTIVITY METER ACCURATELY MEASURES FLOW OF LOW-CONDUCTIVITY FLUIDS JPL-0021	B63-10280	01-01
CONTINUITY TESTER SCREENS OUT FAULTY SOCKET CONNECTIONS JPL-596	B64-10065	01-01	CONNECTOR MODULAR CHASSIS SIMPLIFIES PACKAGING AND INTERCONNECTING OF CIRCUIT BOARDS JPL-236A	B63-10174	01-01
RING COUNTER MAY BE ADVANCED OR RETARDED BY COMMAND SIGNAL GSFC-101	B64-10144	01-01	PORTABLE DISPLAY PANELING HAS WIDE USE, EASY TAKE DOWN AND ASSEMBLY ARC-17	B63-10435	01-05
TEMPERATURE-COMPENSATION CIRCUIT STABILIZES PERFORMANCE OF VIDICONS JPL-486	B64-10226	01-01	CONNECTOR FOR THERMOCOUPLE LEADS SAVES COSTLY WIRE, MAKES RELIABLE CONNECTORS LANGLEY-26	B63-10529	01-01
CIRCUIT BOARD MODULAR CHASSIS SIMPLIFIES PACKAGING AND INTERCONNECTING OF CIRCUIT BOARDS JPL-236A	B63-10174	01-01	PLASTIC MOLDS REDUCE COST OF ENCAPSULATING ELECTRIC CABLE CONNECTORS M-FS-69	B63-10568	01-05
CLAMP NOVEL CLAMPS ALIGN LARGE ROCKET CASES, ELIMINATE BACK-UP BARS M-FS-1	B63-10376	01-05	CIRCUIT RELIABILITY BOOSTED BY SOLDERING PINS OF DISCONNECT PLUGS TO SOCKETS JPL-447	B64-10002	01-01
CLEANING STRINGENT CLEANING TECHNIQUE ASSURES RELIABLE EPOXY BOND GSFC-161	B64-10142	01-03	MODIFIED RF COAXIAL CONNECTOR ENDS VACUUM CHAMBER WIRING PROBLEM GSFC-150	B64-10010	01-01
CLUTCH QUICK-ACTING CLUTCH DISENGAGES IDLE DRIVE MOTOR GSFC-143	B64-10028	01-05	COMPACT COAXIAL CONNECTOR FOR PRINTED CIRCUIT ADDS RELIABILITY MSC-57	B64-10016	01-01
COATING ELASTOMERS BONDED TO METAL SURFACES SEAL ELECTROCHEMICAL CELLS GSFC-168	B64-10113	01-03	CONTINUITY TESTER SCREENS OUT FAULTY SOCKET CONNECTIONS JPL-596	B64-10065	01-01
COAXIAL CABLE MODIFIED RF COAXIAL CONNECTOR ENDS VACUUM CHAMBER WIRING PROBLEM GSFC-150	B64-10010	01-01	CONNECTOR SEALS FLUID LINES AT CRYOGENIC TEMPERATURES AND HIGH VACUUMS GSFC-253	B64-10327	01-05
COMPACT COAXIAL CONNECTOR FOR PRINTED CIRCUIT ADDS RELIABILITY MSC-57	B64-10016	01-01	CONTAINER LIGHTWEIGHT MAGNESIUM-LITHIUM ALLOYS SHOW PROMISE M-FS-17	B63-10389	01-03
COBALT ALLOY NEW COBALT ALLOYS HAVE HIGH-TEMPERATURE STRENGTH AND LONG LIFE IN VACUUM ENVIRONMENTS LEWIS-47	B63-10351	01-03	CONTOUR NOVEL SHOCK ABSORBER FEATURES VARYING YIELD STRENGTHS MSC-63A	B64-10138	01-03
COMPONENT RELIABILITY IMPROVED INSERTION-LOSS TESTER JPL-358	B64-10080	01-01	CONTROL VALVE HIGH-PRESSURE REGULATING SYSTEM PREVENTS PRESSURE SURGES JPL-231	B63-10170	01-05
COMPUTER COMPUTER DETERMINES HIGH-FREQUENCY PHASE STABILITY GSFC-113	B63-10555	01-01	CONVERTER TRANSISTORIZED CONVERTER PROVIDES NONDISSIPATIVE REGULATION GSFC-238	B64-10305	01-01
COMPUTER DESIGN MODULAR CHASSIS SIMPLIFIES PACKAGING AND INTERCONNECTING OF CIRCUIT BOARDS JPL-236A	B63-10174	01-01	COOLANT INTEGRAL COOLANT CHANNELS SIMPLY MADE BY MELT-OUT METHOD M-FS-91	B63-10497	01-05
VEITCH DIAGRAM PLOTTER SIMPLIFIES BOOLEAN FUNCTIONS JPL-385	B63-10241	01-05	COOLING COOLING METHOD PROLONGS LIFE OF HOT-WIRE TRANSDUCER LEWIS-41	B63-10344	01-02

COORDINATE SYSTEM			CURVED SURFACE		
SOLAR-ANGLE SENSOR HAS NO MOVING PARTS	B63-10260	01-02	FLEXIBLE HONEYCOMB STRUCTURE CAN BEND TO FIT		
JPL-418			COMPOUND CURVES	B63-10385	01-05
CORROSION RESISTANCE					
REMOVABLE PREHEATER ELEMENTS IMPROVE OXIDE			LATHE CONVERTED FOR GRINDING ASPHERIC SURFACES		
INDUCTION FURNACE	B63-10193	01-01	GSFC-115	B63-10556	01-05
JPL-288					
FILLER DEVICE FOR HANDLING HOT CORROSIVE MATERIALS			CYLINDER		
MSC-85	B64-10166	01-03	SUPERCOLD TECHNIQUE DUPLICATES MAGNETIC FIELD		
SOLDER FLUX LEAVES CORROSION-RESISTANT COATING ON METAL			IN SECOND SUPERCONDUCTOR		
JPL-611	B64-10206	01-03	JPL-376	B63-10237	01-05
			SHAPED SUPERCONDUCTOR CYLINDER RETAINS INTENSE		
			MAGNETIC FIELD		
			JPL-381		
			B63-10238		
			01-01		
COUNTER			SIMPLE MECHANISM COMBINES POSITIVE LOCKING AND		
RING COUNTER MAY BE ADVANCED OR RETARDED BY			QUICK-RELEASE FEATURES		
COMMAND SIGNAL	B64-10144	01-01	WOO-4	B63-10420	01-05
GSFC-101					
NOVEL CIRCUIT COMBINES PULSE STRETCHER WITH NOR GATE			KINETIC-ENERGY ABSORBER EMPLOYS FRICTIONAL		
GSFC-187	B64-10150	01-01	LEWIS-75	B63-10442	01-05
COUNTERBALANCE SYSTEM			D		
SELF-BALANCING BEAM PERMITS SAFE, EASY LOAD			DAMPING		
HANDLING UNDER OVERHANG	B63-10571	01-05	FRICTIONAL WEDGE SHOCK MOUNT IS INEXPENSIVE,		
M-FS-84			HAS GOOD DAMPING CHARACTERISTICS		
			JPL-IT-1001		
			B63-10289		
			01-05		
CRANE			DATA PROCESSING		
SPEED-SENSING DEVICE AIDS CRANE OPERATORS	B64-10006	01-05	TRANSFLUXOR CIRCUIT AMPLIFIES SENSING CURRENT		
MS-4			FOR COMPUTER MEMORIES		
			JPL-406		
			B63-10255		
			01-01		
CRYOGENIC EQUIPMENT			DECELERATION		
CRYOGENIC FILTER METHOD PRODUCES SUPER-PURE			KINETIC-ENERGY ABSORBER EMPLOYS FRICTIONAL		
HELIUM AND HELIUM ISOTOPES	B63-10235	01-03	FORCE BETWEEN MATING CYLINDERS		
JPL-374			LEWIS-75		
			B63-10442		
			01-05		
COMPOSITE, VACUUM-JACKETED TUBING REPLACES BELLOWS IN CRYOGENIC SYSTEMS			NOVEL SHOCK ABSORBER FEATURES VARYING YIELD		
LEWIS-67	B63-10368	01-05	STRENGTHS		
			MSC-63A		
			B64-10138		
			01-03		
CRYOGENIC WAVEGUIDE WINDOW IS SEALED WITH PLASTIC FOAM			DEPOSITION		
JPL-559	B63-10613	01-01	INTEGRAL COOLANT CHANNELS SIMPLY MADE BY MELT-		
			OUT METHOD		
			M-FS-91		
			B63-10497		
			01-05		
SENSITIVE LOW-PRESSURE RELIEF VALVE HAS POSITIVE SEATING AGAINST LEAKAGE			DETECTION		
WOO-041	B64-10278	01-05	CONTINUITY TESTER SCREENS OUT FAULTY SOCKET		
			CONNECTIONS		
			JPL-596		
			B64-10065		
			01-01		
CRYOGENIC FLUID			USE OF PHOTOGRAPHS SPEEDS INSPECTION OF		
LEVEL OF SUPER-COLD LIQUIDS AUTOMATICALLY			PRINTED-CIRCUIT BOARDS		
MAINTAINED BY LEVELOMETER	B63-10250	01-01	MSC-72		
JPL-397			B64-10118		
			01-01		
LIQUID-LEVEL METER HAS NO MOVING PARTS					
M-FS-3	B63-10378	01-03			
CRYOGENIC TEMPERATURE			DIE		
CONNECTOR SEALS FLUID LINES AT CRYOGENIC			GUIDE FOR EXTRUSION DIES ELIMINATES		
TEMPERATURES AND HIGH VACUUMS	B64-10327	01-05	STRAIGHTENING OPERATION		
GSFC-253			LEWIS-152		
			B64-10014		
			01-05		
CRYOPUMPING			DIGITAL COMPUTER		
CRYOPUMPING OF HYDROGEN IN VACUUM CHAMBERS IS			SMALL DIGITAL RECORDING HEAD HAS PARALLEL BIT		
AIDED BY CATALYTIC OXIDATION OF HYDROGEN	B63-10340	01-05	CHANNELS, MINIMIZES CROSS TALK		
LEWIS-15			JPL-0029		
			B63-10284		
			01-01		
CRYOSTAT			DIGITAL TECHNIQUE		
LOW-COST INSULATION SYSTEM FOR CRYOSTATS			BINARY SYSTEM GENERATES SIDEREAL RATE FROM		
ELIMINATES NEED FOR A VACUUM	B63-10365	01-03	STANDARD SOLAR RATE		
LEWIS-64			GSFC-190		
			B64-10200		
			01-01		
CRYSTAL			DIGITAL CARDIOMETER COMPUTES AND DISPLAYS		
CESIUM IODIDE CRYSTALS FUSED TO VACUUM TUBE			HEARTBEAT RATE		
FACEPLATES	B63-10476	01-03	MSC-93		
GSFC-67			B64-10258		
			01-01		
CURRENT AMPLIFIER			DIGITAL-TO-ANALOG CONVERTER		
NEW LOW-LEVEL A-C AMPLIFIER PROVIDES ADJUST-			DIGITAL LOGIC ELEMENTS PROVIDE ADDITIONAL		
ABLE NOISE CANCELLATION AND AUTOMATIC TEMPERA-			FUNCTIONS FROM ANALOG INPUT		
TURE COMPENSATION	B63-10003	01-04	MSC-64		
ARC-2			B64-10064		
			01-01		
TRANSFLUXOR CIRCUIT AMPLIFIES SENSING CURRENT FOR COMPUTER MEMORIES			DIODE		
JPL-406	B63-10255	01-01	SIMPLE CIRCUIT PROVIDES ADJUSTABLE VOLTAGE		
			WITH LINEAR TEMPERATURE VARIATION		
			JPL-WOO-029		
			B63-10537		
			01-01		

MOUNTING FOR DIODES PROVIDES EFFICIENT HEAT SINK M-FS-197	864-10283	01-01	
DIRECT CURRENT /DC/ LIQUID SWITCH IS REMOTELY OPERATED BY LOW DC VOLTAGE GSFC-119	863-10599	01-01	
HIGH-PASS RF COAXIAL FILTER REJECTS DC AND LOW FREQUENCY SIGNALS GSFC-73	864-10173	01-01	
DISCHARGE AUXILIARY SILVER ELECTRODE ELIMINATES TWO-STEP VOLTAGE DISCHARGE CHARACTERISTIC OF SILVER-ZINC CELLS GSFC-169	864-10114	01-01	
DISPLAY SYSTEM PORTABLE DISPLAY PANELING HAS WIDE USE, EASY TAKE DOWN AND ASSEMBLY ARC-17	863-10435	01-05	
DRIVE QUICK-ACTING CLUTCH DISENGAGES IDLE DRIVE MOTOR GSFC-143	864-10028	01-05	
BEARING TRANSMITS ROTARY AND AXIAL MOTION LANGLEY-27	864-10130	01-05	
THREADING HOOK FACILITATES SAFE RECOVERY OF HEAVY LOADS MSC-46	864-10185	01-05	
APPARATUS ALTERS POSITION OF OBJECTS TO FACILITATE DEMAGNETIZATION GSFC-234	864-10277	01-05	
DROP APPARATUS MEASURES CONCENTRATION OF SUSPENDED DROPLETS IN GAS STREAMS LANGLEY-31	864-10237	01-01	
E			
EDGE UPSETTING BUTT EDGE INCREASES WELD-JOINT STRENGTH M-FS-175	864-10164	01-05	
ELASTOMER ELASTIC ORIFICE AUTOMATICALLY REGULATES GAS BEARINGS JPL-135	863-10123	01-05	
MOLDED ELASTOMER PROVIDES COMPACT FERRITE-CORE HOLDER, SIMPLIFIES ASSEMBLY JPL-584	864-10084	01-05	
ELASTOMERS BONDED TO METAL SURFACES SEAL ELECTROCHEMICAL CELLS GSFC-168	864-10113	01-03	
ELBOW STAINLESS-STEEL ELBOWS FORMED BY SPIN FORGING M-FS-122	863-10590	01-05	
ELECTRIC CONTACT CONTINUITY TESTER SCREENS OUT FAULTY SOCKET CONNECTIONS JPL-596	864-10065	01-01	
ELECTRIC CURRENT IGNITING SYSTEM FOR MERCURY VAPOR LAMPS PROTECTS TRANSISTORIZED SUSTAINING SUPPLY JPL-421	863-10262	01-01	
ELECTRIC ENERGY CAMERA SHUTTER IS ACTUATED BY ELECTRIC SIGNAL ARC-20	863-10560	01-05	
ELECTRIC EQUIPMENT HOT-AIR SOLDERING TECHNIQUE PREVENTS OVERHEATING OF ELECTRICAL COMPONENTS GSFC-91	863-10536	01-01	
ELECTRIC INSULATION CONNECTOR FOR THERMOCOUPLE LEADS SAVES COSTLY WIRE, MAKES RELIABLE CONNECTORS LANGLEY-26	863-10529	01-01	
CONTINUITY TESTER SCREENS OUT FAULTY SOCKET CONNECTIONS JPL-596	864-10065	01-01	
ELECTRIC WIRING CIRCUIT RELIABILITY BOOSTED BY SOLDERING PINS OF DISCONNECT PLUGS TO SOCKETS JPL-447	864-10002	01-01	
ELECTRO-OPTICS LIQUID-LEVEL METER HAS NO MOVING PARTS M-FS-3	863-10378	01-03	
ELECTROCARDIOGRAM DIGITAL CARDIOMETER COMPUTES AND DISPLAYS HEARTBEAT RATE MSC-93	864-10258	01-01	
ELECTROCHEMICAL CELL ELASTOMERS BONDED TO METAL SURFACES SEAL ELECTROCHEMICAL CELLS GSFC-168	864-10113	01-03	
ELECTRODE IMPROVED ELECTRODE GIVES HIGH-QUALITY BIOLOGICAL RECORDINGS MSC-17	864-10025	01-04	
AUXILIARY SILVER ELECTRODE ELIMINATES TWO-STEP VOLTAGE DISCHARGE CHARACTERISTIC OF SILVER-ZINC CELLS GSFC-169	864-10114	01-01	
ELECTROLYTIC MACHINING IMPROVED TECHNIQUE FOR LOCALIZING ELECTRO-POLISHING FEATURES NOVEL NOZZLES WOO-101	864-10271	01-01	
ELECTROMAGNETIC CONTROL DEVICE CALIBRATES VIBRATION TRANSDUCERS AT AMPLITUDES UP TO 20G. M-FS-86	863-10572	01-01	
ELECTROMAGNETIC MEASUREMENT METER ACCURATELY MEASURES FLOW OF LOW-CONDUCTIVITY FLUIDS JPL-0021	863-10280	01-01	
ELECTROMECHANICAL DEVICE STEPPING SWITCH WITH SIMPLE ACTUATOR PROVIDES MANY CONTACTS IN SMALL SPACE JPL-122	863-10118	01-01	
ELECTROMECHANICALLY OPERATED CAMERA SHUTTER PROVIDES UNIFORM EXPOSURE JPL-357	863-10227	01-01	
ELECTROMETER FIELD-EFFECT TRANSISTOR IMPROVES ELECTROMETER AMPLIFIER ARC-36	864-10143	01-01	
ELECTRONIC EQUIPMENT ELECTRONIC ASSEMBLY RACK PANELS SNAP ON AND OFF GSFC-59	864-10121	01-05	
ELECTRONIC INSPECTION DEVICE CONTINUITY TESTER SCREENS OUT FAULTY SOCKET CONNECTIONS JPL-596	864-10065	01-01	
ELECTROPLATING HIGH PURITY ELECTROFORMING YIELDS SUPERIOR METAL MODELS ARC-6	863-10007	01-05	
ELLIPSOIDAL OPTICAL REFLECTORS REPRODUCED BY ELECTROFORMING GSFC-92	863-10547	01-05	
METALS PLATED ON FLUOROCARBON POLYMERS JPL-544	863-10612	01-03	

FILTER

EXPIRATION

DEVELOPMENT OF A
DEVICE INDUCES LUNGS TO MAINTAIN KNOWN
CONSTANT PRESSURE
MSC-50 B64-10108 01-04

EXPOSURE

ELECTROMECHANICALLY OPERATED CAMERA SHUTTER
PROVIDES UNIFORM EXPOSURE
JPL-357 863-10227 01-01

EXTRUSION

RAPID BILLET LOADER AIDS EXTRUSION OF REFRAC-
 TORY METALS
 LEWIS-50 863-10354 01-05

GUIDE FOR EXTRUSION DIES ELIMINATES
STRAIGHTENING OPERATION
LEWIS-152 B6

LEWIS-152 864-10014 01-05

F

IRING
PRESSURE TRANSDUCER 3/8-INCH IN SIZE CAN BE
FAIRED INTO SURFACE
W00-065 B64-10021 01-05

FAIRING

WOO-065 864-10021 01-05

FASTENER

V-SLOTTED SCREW HEAD AND MATCHING DRIVING TOOL
FACILITATE INSERTION AND REMOVAL OF SCREW
FASTENERS
FRC-16 863-10023 01-05

HEAVY-DUTY STAPLE REMOVER OPERATED BY HAND
JPL-IT-1004 863-10292 01-05

ELECTRONIC ASSEMBLY RACK PANELS SNAP ON AND OFF
GSEC-59 864-10121

FLEXIBLE FASTENER ALLOWS THERMAL EXPANSION
LANGLEY-40 B64-10145 01-05

THREADING HOOK FACILITATES SAFE RECOVERY OF
HEAVY LOADS
MSC-46 B64-10185

HEAVY LOADS
MSC-46 B64-10185 01-05

FEEDBACK CONTROL SYSTEM

APPARATUS MEASURES VERY SMALL THRUSTS
W00-048 864-10284 01-05

FERRITE

SMALL DIGITAL RECORDING HEAD HAS PARALLEL BIT CHANNELS, MINIMIZES CROSS TALK
JPL-0029 B63-10284

NEW SINTERING PROCESS ADJUSTS MAGNETIC VALUE
OF FERRITE CORES
GSFC-129 B63-10606 01-01

MOLDED ELESTOMER PROVIDES COMPACT FERRITE-CORE
HOLDER, SIMPLIFIES ASSEMBLY
JPL-584 B64-10084 0

FIELD EFFECT TRANSISTOR /FET/
FIELD-EFFECT TRANSISTOR IMPROVES ELECTROMETER
AMPLIFIER
ARC-36 864-10143

FIELD EFFECT TRANSISTORS USED AS VOLTAGE-
CONTROLLED RESISTORS
M-FS-174 B64-10163 01-01

FILAMENT

RADIANT HEATER FOR VACUUM FURNACES OFFERS HIGH
STRUCTURAL RIGIDITY, LOW HEAT LOSS
LEWIS-39 B63-10342 01-01

FILTER

MODIFIED FILTER PREVENTS CONDUCTION OF MICRO-
WAVE SIGNALS ALONG HIGH-VOLTAGE POWER SUPPLY
LEADS

FILTER FOR HIGH-PRESSURE GASES HAS EASY TAKE-DOWN. ASSEMBLY

FILTER FOR HIGH-PRESSURE GASES HAS EASY TAKE-DOWN. ASSEMBLY

FITTING

SUBJECT INDEX

JPL-373	B63-10234	01-03	FLUID TRANSMISSION LINE		
CRYOGENIC FILTER METHOD PRODUCES SUPER-PURE			SAFETY RESTRAINER PREVENTS WHIPPING OF		
HELIUM AND HELIUM ISOTOPES			RUPTURED HIGH-PRESSURE HOSE	B64-10348	01-05
JPL-374	B63-10235	01-03	LEWIS-99		
FINE-PARTICLE FILTER PREVENTS DAMAGE TO VACUUM			FLUORESCENCE		
PUMPS			OIL-SMEARED MODELS AID WIND TUNNEL		
LEWIS-106	B63-10489	01-05	MEASUREMENTS	B63-10311	01-03
HIGH-PASS RF COAXIAL FILTER REJECTS DC AND LOW			LANGLEY-4		
FREQUENCY SIGNALS			FLUOROCARBON		
GSFC-73	B64-10173	01-01	METALS PLATED ON FLUOROCARBON POLYMERS	B63-10612	01-03
			JPL-544		
FITTING			FLUX DENSITY		
SELF SEALING DISCONNECT FOR TUBING FORMS METAL			SHAPED SUPERCONDUCTOR CYLINDER RETAINS INTENSE		
SEAL AFTER BREAKAWAY			MAGNETIC FIELD	B63-10238	01-01
JPL-354	B63-10226	01-05	JPL-381		
SPECIAL PLIERS CONNECT HOSE CONTAINING LIQUID			FOCUS		
UNDER PRESSURE			FRESNEL CUP REFLECTOR DIRECTS MAXIMUM ENERGY		
JPL-IT-1003	B63-10291	01-05	FROM LIGHT SOURCE	B63-10263	01-03
			JPL-424		
FLANGE			FOIL		
FLANGE ON MICROWAVE ANTENNA SUBREFLECTOR CUTS			INDIUM FOIL WITH BERYLLIA WASHER IMPROVES		
GROUND NOISE			TRANSISTOR HEAT DISSIPATION	B63-10033	01-01
JPL-362	B63-10229	01-01	GSFC-42		
FLEXIBILITY			FORGING		
FLEXIBLE HONEYCOMB STRUCTURE CAN BEND TO FIT			UPSETTING BUTT EDGE INCREASES WELD-JOINT		
COMPOUND CURVES			STRENGTH	B64-10164	01-05
M-FS-13	B63-10385	01-05	M-FS-175		
FLEXURE			FRACTURE		
LIGHTWEIGHT UNIVERSAL JOINT TRANSMITS BOTH			PRESSURE MOLDING OF POWDERED MATERIALS		
TORQUE AND THRUST			IMPROVED BY RUBBER MOLD INSERT	B64-10270	01-03
JPL-375	B63-10236	01-05	WOO-100		
FLOOR			FRAGMENTATION		
PORTABLE FLOORING PROTECTS FINISHED SURFACES,			BREAK-UP OF METAL TUBE MAKES ONE-TIME SHOCK		
IS EASILY MOVED			ABSORBER, BARS REBOUND	B63-10304	01-05
M-FS-15	B63-10387	01-05	LANGLEY-1A		
FLOW CHARACTERISTICS			FRAME		
OIL-SMEARED MODELS AID WIND TUNNEL			APPARATUS ALTERS POSITION OF OBJECTS TO		
MEASUREMENTS			FACILITATE DEMAGNETIZATION	B64-10277	01-05
LANGLEY-4	B63-10311	01-03	GSFC-234		
FLOW MEASUREMENT			FREQUENCY		
FLUID-PRESSURE METER CAN BE CALIBRATED WITHOUT			VOLTAGE GENERATOR SWEEPS OSCILLATOR FREQUENCY		
REMOVAL FROM FLOW LINE			LINEARLY WITH TIME	B64-10320	01-01
M-FS-98	B63-10502	01-05	M-FS-219		
FLOW METER			FREQUENCY CONTROL		
METER ACCURATELY MEASURES FLOW OF LOW-CONDUCT-			TRANSISTORIZED TRIGGER CIRCUIT IS FREQUENCY-		
TIVITY FLUIDS			CONTROLLABLE	B63-10553	01-01
JPL-0021	B63-10280	01-01	GSFC-111		
FLUID-PRESSURE METER CAN BE CALIBRATED WITHOUT			FREQUENCY CONVERSION		
REMOVAL FROM FLOW LINE			FREQUENCY-SHIFT-KEYER CIRCUIT IMPROVES PCM		
M-FS-98	B63-10502	01-05	CONVERSION FOR RADIO TRANSMISSION	B63-10511	01-01
BALL BEARING USED IN DESIGN OF RUGGED FLOW-			GSFC-80		
METER			FREQUENCY MEASUREMENT		
LEWIS-159	B64-10170	01-05	SMALL FOAMED POLYSTYRENE SHIELD PROTECTS LOW-		
FLOW RATE			FREQUENCY MICROPHONES FROM WIND NOISE	B63-10579	01-01
ELASTIC ORIFICE AUTOMATICALLY REGULATES GAS			M-FS-123		
BEARINGS			FREQUENCY RANGE		
JPL-135	B63-10123	01-05	INCREASED PERFORMANCE RELIABILITY OBTAINED		
FLUID			WITH DUAL /REDUNDANT/ OSCILLATOR SYSTEM	B63-10027	01-01
HIGH-PRESSURE REGULATING SYSTEM PREVENTS			GSFC-36		
PRESSURE SURGES			FREQUENCY-SHIFT KEYING		
JPL-231	B63-10170	01-05	FREQUENCY-SHIFT-KEYER CIRCUIT IMPROVES PCM		
COOLING METHOD PROLONGS LIFE OF HOT-WIRE			CONVERSION FOR RADIO TRANSMISSION	B63-10511	01-01
TRANSDUCER			GSFC-80		
LEWIS-41	B63-10344	01-02	FRESNEL REFLECTOR		
CONNECTOR SEALS FLUID LINES AT CRYOGENIC			FRESNEL CUP REFLECTOR DIRECTS MAXIMUM ENERGY		
TEMPERATURES AND HIGH VACUUMS			FROM LIGHT SOURCE	B63-10263	01-03
GSFC-253	B64-10327	01-05	JPL-424		
FLUID SWITCHING ELEMENT			FRICTION		
LIQUID SWITCH IS REMOTELY OPERATED BY LOW DC			CHAIN FRICTION SYSTEM GIVES POSITIVE, REVERS-		
VOLTAGE			IBLE DRIVE	B63-10009	01-05
GSFC-119	B63-10599	01-01	ARC-8		

SUBJECT INDEX

HEAT DISSIPATION

KINETIC-ENERGY ABSORBER EMPLOYS FRICTIONAL FORCE BETWEEN MATING CYLINDERS
LEWIS-75 863-10442 01-05

GATE VALVE WITH CERAMIC-COATED BASE OPERATES AT HIGH TEMPERATURES
ARC-23 863-10562 01-03

BUCKLE JOINS WEB STRAPS QUICKLY, ADJUSTS EASILY
LANGLEY-21 864-10119 01-05

FURNACE
RADIANT HEATER FOR VACUUM FURNACES OFFERS HIGH STRUCTURAL RIGIDITY, LOW HEAT LOSS
LEWIS-39 863-10342 01-01

RAPID BILLET LOADER AIDS EXTRUSION OF REFRACTORY METALS
LEWIS-50 863-10354 01-05

FUSION
CIRCUIT RELIABILITY BOOSTED BY SOLDERING PINS OF DISCONNECT PLUGS TO SOCKETS
JPL-447 864-10002 01-01

G

GALLIUM
GALLIUM USEFUL BEARING LUBRICANT IN HIGH-VACUUM ENVIRONMENT
LEWIS-12 863-10337 01-03

GALLIUM ARSENIDE
NEW METHOD USED TO FABRICATE GALLIUM ARSENIDE PHOTOVOLTAIC DEVICE
WOO-062 864-10019 01-01

ECONOMICAL FABRICATION PROCESS PRODUCES HIGH-QUALITY JUNCTION TRANSISTORS
JPL-SC-065 864-10330 01-01

GAS
FILTER FOR HIGH-PRESSURE GASES HAS EASY TAKE-DOWN, ASSEMBLY
JPL-373 863-10234 01-03

GAS ANALYZER
RAPID HELIUM-AIR ANALYZER CAN MEASURE OTHER BINARY GAS MIXTURES
LANGLEY-16 863-10557 01-03

GAS BEARING
ELASTIC ORIFICE AUTOMATICALLY REGULATES GAS BEARINGS
JPL-135 863-10123 01-05

MODIFIED GAS BEARING IS ADJUSTABLE TO OPTIMUM STIFFNESS RATIO
M-FS-145 864-10050 01-05

PNEUMATIC POWER IS TRANSMITTED THROUGH AIR BEARING
MSC-8 864-10141 01-05

GAS COOLING SYSTEM
HIGH-TEMPERATURE, HIGH-PRESSURE SPHERICAL SEGMENT VALVE PROVIDES QUICK OPENING
ARC-13 863-10431 01-05

GAS FLOW
HIGH-PRESSURE REGULATING SYSTEM PREVENTS PRESSURE SURGES
JPL-231 863-10170 01-05

BLADE VALVE ISOLATES COMPARTMENT IN PIPE, OPENS TO ALLOW FREE FLOW
JPL-585 864-10188 01-05

GAS MIXTURE
RAPID HELIUM-AIR ANALYZER CAN MEASURE OTHER BINARY GAS MIXTURES
LANGLEY-16 863-10557 01-03

GAS PRESSURE
PRECISION GAGE MEASURES ULTRAHIGH VACUUM LEVELS
GSFC-114 863-10597 01-01

DEVICE INDUCES LUNGS TO MAINTAIN KNOWN CONSTANT PRESSURE
MSC-50 864-10108 01-04

GAS STREAM
APPARATUS MEASURES CONCENTRATION OF SUSPENDED DROPLETS IN GAS STREAMS
LANGLEY-31 864-10237 01-01

GAUGE
LEVEL OF SUPER-COLD LIQUIDS AUTOMATICALLY MAINTAINED BY LEVELOMETER
JPL-397 863-10250 01-01

GEAR
CHAIN FRICTION SYSTEM GIVES POSITIVE, REVERSIBLE DRIVE
ARC-8 863-10009 01-05

GENERATOR
BINARY SYSTEM GENERATES SIDEREAL RATE FROM STANDARD SOLAR RATE
GSFC-190 864-10200 01-01

VOLTAGE GENERATOR SWEEPS OSCILLATOR FREQUENCY LINEARLY WITH TIME
M-FS-219 864-10320 01-01

GRAVITATIONAL EFFECT
TECHNIQUE SIMULATES EFFECT OF REDUCED GRAVITY
LANGLEY-44 864-10146 01-04

GRID
FINE-MESH SCREEN MADE BY SIMPLIFIED METHOD
WOO-104 864-10282 01-03

RADIATION DETECTOR-OPTICAL HANGING DEVICE IS OF SIMPLIFIED CONSTRUCTION
GSFC-251 864-10299 01-01

GRINDING MACHINE
LATHE CONVERTED FOR GRINDING ASPHERIC SURFACES
GSFC-115 863-10556 01-05

GROOVE
NEW PACKAGE FOR BELLEVILLE SPRING PERMITS RATE CHANGE, EASY DISASSEMBLY
JPL-392 863-10247 01-05

GROUND RESONANCE
FLANGE ON MICROWAVE ANTENNA SUBREFLECTOR CUTS GROUND NOISE
JPL-362 863-10229 01-01

GUN
QUICK-HARDENING PROBLEMS ARE ELIMINATED WITH SPRAY GUN MODIFICATION WHICH MIXES RESIN AND ACCELERATOR LIQUIDS DURING APPLICATION
LANGLEY-6A 863-10318 01-03

H

HANDLING EQUIPMENT
FILLER DEVICE FOR HANDLING HOT CORROSIVE MATERIALS
MSC-85 864-10166 01-03

HARDENING
QUICK-HARDENING PROBLEMS ARE ELIMINATED WITH SPRAY GUN MODIFICATION WHICH MIXES RESIN AND ACCELERATOR LIQUIDS DURING APPLICATION
LANGLEY-6A 863-10318 01-03

STRINGENT CLEANING TECHNIQUE ASSURES RELIABLE EPOXY BOND
GSFC-161 864-10142 01-03

HAZARD
LOW-COST INSULATION SYSTEM FOR CRYOSTATS ELIMINATES NEED FOR A VACUUM
LEWIS-64 863-10365 01-03

HEART RATE
DIGITAL CARDIOMETER COMPUTES AND DISPLAYS HEARTBEAT RATE
MSC-93 864-10258 01-01

HEAT DISSIPATION
INDIUM FOIL WITH BERYLLIA WASHER IMPROVES

HEAT RESISTANCE

SUBJECT INDEX

TRANSISTOR HEAT DISSIPATION GSFC-42	B63-10033	01-01	HERMETIC SEAL DEVICE TRANSMITS ROTARY MOTION THROUGH HERMET- ICALLY SEALED WALL JPL-303	B63-10198	01-05
HEAT RESISTANCE REMOVABLE PREHEATER ELEMENTS IMPROVE OXIDE INDUCTION FURNACE JPL-288	B63-10193	01-01	HIGH EFFICIENCY HIGHLY EFFICIENT SQUARE-WAVE OSCILLATOR OPER- ATOR AT HIGH POWER LEVELS GSFC-112	B63-10554	01-01
THERMALLY CONDUCTIVE METAL WOOL-SILICONE RUBBER MATERIAL CAN BE USED AS SHOCK AND VIBRATION DAMPER JPL-321	B63-10207	01-03	HIGH FREQUENCY COMPUTER DETERMINES HIGH-FREQUENCY PHASE STABILITY GSFC-113	B63-10555	01-01
HEAT SHIELD NEW METHOD FORMS BOND LINE FREE OF VOIDS LANGLEY-20	B63-10558	01-05	HIGH POWER HIGHLY EFFICIENT SQUARE-WAVE OSCILLATOR OPER- ATOR AT HIGH POWER LEVELS GSFC-112	B63-10554	01-01
REFRACTORY THERMAL INSULATION FOR SMOOTH METAL SURFACES M-FS-160	B64-10099	01-03	HIGH PRESSURE HIGH-PRESSURE REGULATING SYSTEM PREVENTS PRESSURE SURGES JPL-231	B63-10170	01-05
HEAT SINK INDIUM FOIL WITH BERYLLIA WASHER IMPROVES TRANSISTOR HEAT DISSIPATION GSFC-42	B63-10033	01-01	HIGH-TEMPERATURE, HIGH-PRESSURE SPHERICAL SEGMENT VALVE PROVIDES QUICK OPENING ARC-13	B63-10431	01-05
MOUNTING FOR DIODES PROVIDES EFFICIENT HEAT SINK M-FS-197	B64-10283	01-01	PNEUMATIC POWER IS TRANSMITTED THROUGH AIR BEARING MSC-8	B64-10141	01-05
HEAT TRANSFER HIGH PURITY ELECTROFORMING YIELDS SUPERIOR METAL MODELS ARC-6	B63-10007	01-05	HIGH SPEED OHMMETER SENSES DEPLETION OF LUBRICANT IN JOURNAL BEARINGS LEWIS-37	B64-10042	01-01
COOLING METHOD PROLONGS LIFE OF HOT-WIRE TRANSDUCER LEWIS-41	B63-10344	01-02	HIGH STRENGTH ALLOY NEW COBALT ALLOYS HAVE HIGH-TEMPERATURE STRENGTH AND LONG LIFE IN VACUUM ENVIRONMENTS LEWIS-47	B63-10351	01-03
NEW METHOD USED TO FABRICATE LIGHT-WEIGHT HEAT EXCHANGER FOR ROCKET MOTOR LEWIS-43	B63-10346	01-02	HIGH TEMPERATURE RADIANT HEATER FOR VACUUM FURNACES OFFERS HIGH STRUCTURAL RIGIDITY, LOW HEAT LOSS LEWIS-39	B63-10342	01-01
SIMPLE TRANSDUCER MEASURES LOW HEAT-TRANSFER RATES JPL-466	B64-10122	01-01	APPARATUS FACILITATES HIGH-TEMPERATURE TENSILE TESTING IN VACUUM LEWIS-42	B63-10345	01-03
HEATER APPARATUS FACILITATES HIGH-TEMPERATURE TENSILE TESTING IN VACUUM LEWIS-42	B63-10345	01-03	HIGH-TEMPERATURE, HIGH-PRESSURE SPHERICAL SEGMENT VALVE PROVIDES QUICK OPENING ARC-13	B63-10431	01-05
FILLER DEVICE FOR HANDLING HOT CORROSIVE MATERIALS MSC-85	B64-10166	01-03	GATE VALVE WITH CERAMIC-COATED BASE OPERATES AT HIGH TEMPERATURES ARC-23	B63-10562	01-03
HEATING INTEGRAL COOLANT CHANNELS SIMPLY MADE BY MELT- OUT METHOD M-FS-91	B63-10497	01-05	HIGH TEMPERATURE ENVIRONMENT NEW COBALT ALLOYS HAVE HIGH-TEMPERATURE STRENGTH AND LONG LIFE IN VACUUM ENVIRONMENTS LEWIS-47	B63-10351	01-03
HELICAL WINDING HELICAL TUBE SEPARATES NITROGEN GAS FROM LIQUID NITROGEN JPL-398	B63-10251	01-05	HIGH TEMPERATURE MATERIAL RAPID BILLET LOADER AIDS EXTRUSION OF REFRAC- TORY METALS LEWIS-50	B63-10354	01-05
HELIUM CRYOGENIC FILTER METHOD PRODUCES SUPER-PURE HELIUM AND HELIUM ISOTOPES JPL-374	B63-10235	01-03	HIGH VACUUM GALLIUM USEFUL BEARING LUBRICANT IN HIGH- VACUUM ENVIRONMENT LEWIS-12	B63-10337	01-03
SUPERCOLD TECHNIQUE DUPLICATES MAGNETIC FIELD IN SECOND SUPERCONDUCTOR JPL-376	B63-10237	01-05	IMPROVED MOLYBDENUM DISULFIDE-SILVER MOTOR BRUSHES HAVE EXTENDED LIFE M-FS-64	B63-10479	01-03
LOW-COST INSULATION SYSTEM FOR CRYOSTATS ELIMINATES NEED FOR A VACUUM LEWIS-64	B63-10365	01-03	HIGH VOLTAGE MODIFIED FILTER PREVENTS CONDUCTION OF MICRO- WAVE SIGNALS ALONG HIGH-VOLTAGE POWER SUPPLY LEADS JPL-63	B63-10091	01-01
RAPID HELIUM-AIR ANALYZER CAN MEASURE OTHER BINARY GAS MIXTURES LANGLEY-16	B63-10557	01-03	HOLDER MOLDED ELESTOMER PROVIDES COMPACT FERRITE-CORE HOLDER, SIMPLIFIES ASSEMBLY JPL-584	B64-10084	01-05
HELMET COMFORTABLE, LIGHTWEIGHT SAFETY HELMET HOLDS RADIO TRANSMITTER, RECEIVER MSC-53	B64-10015	01-05			

SUBJECT INDEX

INPUT

HONEYCOMB CORE FLEXIBLE HONEYCOMB STRUCTURE CAN BEND TO FIT COMPOUND CURVES M-FS-13	B63-10385	01-05	FAIRED INTO SURFACE WOO-065	B64-10021	01-05
HORN ANTENNA NOVEL HORN ANTENNA REDUCES SIDE LOBES, IMPROVES RADIATION PATTERN JPL-425	B63-10264	01-01	IMPACT ULTRA-SENSITIVE TRANSDUCER ADVANCES MICRO- MEASUREMENT RANGE ARC-26	B64-10004	01-01
HOT-WIRE ANEMOMETER COOLING METHOD PROLONGS LIFE OF HOT-WIRE TRANSDUCER LEWIS-41	B63-10344	01-02	IMPACT DECELERATION KINETIC-ENERGY ABSORBER EMPLOYS FRICTIONAL FORCE BETWEEN MATING CYLINDERS LEWIS-75	B63-10442	01-05
HUMAN BODY NOVEL SHOCK ABSORBER FEATURES VARYING YIELD STRENGTHS MSC-63A	B64-10138	01-03	IMPEDANCE HIGH-PASS RF COAXIAL FILTER REJECTS DC AND LOW FREQUENCY SIGNALS GSFC-73	B64-10173	01-01
HUMAN REACTION TECHNIQUE SIMULATES EFFECT OF REDUCED GRAVITY LANGLEY-44	B64-10146	01-04	IMPINGEMENT IMPROVED TECHNIQUE FOR LOCALIZING ELECTRO- POLISHING FEATURES NOVEL NOZZLES WOO-101	B64-10271	01-01
HYDRAULIC EQUIPMENT UPSETTING BUTT EDGE INCREASES WELD-JOINT STRENGTH M-FS-175	B64-10164	01-05	INDICATOR SPEED-SENSING DEVICE AIDS CRANE OPERATORS WS-4	B64-10006	01-05
HYDRAZINE SOLDER FLUX LEAVES CORROSION-RESISTANT COATING ON METAL JPL-611	B64-10206	01-03	INDIUM INDIUM FOIL WITH BERYLLIA WASHER IMPROVES TRANSISTOR HEAT DISSIPATION GSFC-42	B63-10033	01-01
HYDROGEN CRYOPUMPING OF HYDROGEN IN VACUUM CHAMBERS IS AIDED BY CATALYTIC OXIDATION OF HYDROGEN LEWIS-15	B63-10340	01-05	INDUCTION HEATING EQUIPMENT REMOVABLE PREHEATER ELEMENTS IMPROVE OXIDE INDUCTION FURNACE JPL-288	B63-10193	01-01
MINIATURE OXYGEN-HYDROGEN CUTTING TORCH CONSTRUCTED FROM HYPODERMIC NEEDLE JPL-545	B63-10517	01-05	INERT GAS NOVEL CLAMPS ALIGN LARGE ROCKET CASES, ELIMINATE BACK-UP BARS M-FS-1	B63-10376	01-05
HYSTERESIS NEW PACKAGE FOR BELLEVILLE SPRING PERMITS RATE CHANGE, EASY DISASSEMBLY JPL-392	B63-10247	01-05	WELDING PROCEDURE IMPROVES QUALITY OF WELDS, OFFERS OTHER ADVANTAGES M-FS-32	B64-10309	01-01
I-BEAM SELF-BALANCING BEAM PERMITS SAFE, EASY LOAD HANDLING UNDER OVERHANG M-FS-84	B63-10571	01-05	INFLATABLE STRUCTURE NEW INFLATABLE LIFERAFT IS NONTIPPABLE MSC-4A	B64-10001	01-05
IGNITER IGNITING SYSTEM FOR MERCURY VAPOR LAMPS PRO- TECTS TRANSISTORIZED SUSTAINING SUPPLY JPL-421	B63-10262	01-01	INJECTION FILLER DEVICE FOR HANDLING HOT CORROSIVE MATERIALS MSC-85	B64-10166	01-03
IGNITION SYSTEM IGNITING SYSTEM FOR MERCURY VAPOR LAMPS PRO- TECTS TRANSISTORIZED SUSTAINING SUPPLY JPL-421	B63-10262	01-01	ECONOMICAL FABRICATION PROCESS PRODUCES HIGH- QUALITY JUNCTION TRANSISTORS JPL-SC-065	B64-10330	01-01
CIRCUIT CONTROLS TRANSIENTS IN SCR INVERTERS GSFC-120	B63-10600	01-01	INLET PACKLESS VALVE WITH ALL-METAL SEAL HANDLES WIDE TEMPERATURE, PRESSURE RANGE JPL-361	B63-10228	01-05
IMAGE SETTING OF ANGLES ON MACHINE TOOLS SPEEDED BY MAGNETIC PROTRACTOR ARC-5	B63-10006	01-01	FILTER FOR HIGH-PRESSURE GASES HAS EASY TAKE- DOWN, ASSEMBLY JPL-373	B63-10234	01-03
BUILT-IN TEMPLATES SPEED UP PROCESS FOR MAKING ACCURATE MODELS LANGLEY-23	B63-10526	01-05	FLUID-PRESSURE METER CAN BE CALIBRATED WITHOUT REMOVAL FROM FLOW LINE M-FS-98	B63-10502	01-05
IMAGE TRANSDUCER CESIUM IODIDE CRYSTALS FUSED TO VACUUM TUBE FACEPLATES GSFC-67	B63-10476	01-03	INPUT VEITCH DIAGRAM PLOTTER SIMPLIFIES BOOLEAN FUNCTIONS JPL-385	B63-10241	01-05
IMAGING TECHNIQUE ELECTROMECHANICALLY OPERATED CAMERA SHUTTER PROVIDES UNIFORM EXPOSURE JPL-357	B63-10227	01-01	DOUBLE-THROW MICROWAVE DEVICE SWITCHES TWO LINES QUICKLY JPL-410	B63-10258	01-01
IMBEDDING PRESSURE TRANSDUCER 3/8-INCH IN SIZE CAN BE			COMPUTER CIRCUIT WILL FIT ON SINGLE SILICON CHIP JPL-513	B63-10514	01-01
			TRANSISTORIZED CONVERTER PROVIDES NONDISSIPA- TIVE REGULATION GSFC-238	B64-10305	01-01

INSERT

SUBJECT INDEX

INSERT
GATE VALVE WITH CERAMIC-COATED BASE OPERATES
AT HIGH TEMPERATURES
ARC-23 863-10562 01-03

INSERTION
IMPROVED INSERTION-LOSS TESTER
JPL-358 864-10080 01-01

INSPECTION
USE OF PHOTOGRAPHS SPEEDS INSPECTION OF
PRINTED-CIRCUIT BOARDS
MSC-72 864-10118 01-01

INSTRUMENTATION
INSTRUMENT ADJUSTMENT KNOB LOCKS TO PREVENT
ACCIDENTAL MALADJUSTMENT
M-FS-190 864-10249 01-05

INSULATING MATERIAL
MODIFIED RF COAXIAL CONNECTOR ENDS VACUUM
CHAMBER WIRING PROBLEM
GSFC-150 864-10010 01-01

INSULATION
LOW-COST INSULATION SYSTEM FOR CRYOSTATS
ELIMINATES NEED FOR A VACUUM
LEWIS-64 863-10365 01-03

INSULATOR
CONNECTOR FOR THERMOCOUPLE LEADS SAVES COSTLY
WIRE, MAKES RELIABLE CONNECTORS
LANGLEY-26 863-10529 01-01

INTEGRATOR
DIGITAL LOGIC ELEMENTS PROVIDE ADDITIONAL
FUNCTIONS FROM ANALOG INPUT
MSC-64 864-10064 01-01

INTENSITY
VARIABLE LIGHT SOURCE WITH A MILLION-TO-ONE
INTENSITY RATIO
JPL-WOO-008 863-10424 01-03

INTERFACE
INDIUM FOIL WITH BERYLLIA WASHER IMPROVES
TRANSISTOR HEAT DISSIPATION
GSFC-42 863-10033 01-01

INVERTER
CIRCUIT CONTROLS TRANSIENTS IN SCR INVERTERS
GSFC-120 863-10600 01-01

INVESTMENT CASTING
VACUUM FORMING OF THERMOPLASTIC SHEET RESULTS
IN LOW-COST INVESTMENT CASTING PATTERNS
ARC-7 863-10008 01-05

IODIDE
CESIUM IODIDE CRYSTALS FUSED TO VACUUM TUBE
FACEPLATES
GSFC-67 863-10476 01-03

NEW METHOD USED TO FABRICATE GALLIUM ARSENIDE
PHOTOVOLTAIC DEVICE
WOO-062 864-10019 01-01

PRESSURE TRANSDUCER 3/8-INCH IN SIZE CAN BE
FAIRED INTO SURFACE
WOO-065 864-10021 01-05

ION
FINE-MESH SCREEN MADE BY SIMPLIFIED METHOD
WOO-104 864-10282 01-03

ION BEAM
NEW APPARATUS INCREASES ION BEAM POWER DENSITY
LEWIS-73 863-10440 01-01

ION DENSITY
NEW APPARATUS INCREASES ION BEAM POWER DENSITY
LEWIS-73 863-10440 01-01

ION ENGINE
NEW APPARATUS INCREASES ION BEAM POWER DENSITY
LEWIS-73 863-10440 01-01

APPARATUS MEASURES VERY SMALL THRUSTS
WOO-048 864-10284 01-05

IONIZATION GAUGE
PRECISION GAGE MEASURES ULTRAHIGH VACUUM
LEVELS
GSFC-114 863-10597 01-01

IRON
MODIFIED FILTER PREVENTS CONDUCTION OF MICRO-
WAVE SIGNALS ALONG HIGH-VOLTAGE POWER SUPPLY
LEADS
JPL-63 863-10091 01-01

IRON OXIDE
CRYOGENIC FILTER METHOD PRODUCES SUPER-PURE
HELIUM AND HELIUM ISOTOPES
JPL-374 863-10235 01-03

ISOLATION
HIGH-PASS RF COAXIAL FILTER REJECTS DC AND LOW
FREQUENCY SIGNALS
GSFC-73 864-10173 01-01

J

JOINT
LIGHTWEIGHT UNIVERSAL JOINT TRANSMITS BOTH
TORQUE AND THRUST
JPL-375 863-10236 01-05

SLEEVE AND CUTTER SIMPLIFY DISCONNECTING
WELDED JOINT IN TUBING
JPL-384 863-10240 01-05

NEW METHOD USED TO FABRICATE LIGHT-WEIGHT HEAT
EXCHANGER FOR ROCKET MOTOR
LEWIS-43 863-10346 01-02

CIRCUIT RELIABILITY BOOSTED BY SOLDERING PINS
OF DISCONNECT PLUGS TO SOCKETS
JPL-447 864-10002 01-01

FLEXIBLE FASTENER ALLOWS THERMAL EXPANSION
LANGLEY-40 864-10145 01-05

JOURNAL BEARING
OHMMETER SENSES DEPLETION OF LUBRICANT IN
JOURNAL BEARINGS
LEWIS-37 864-10042 01-01

JUNCTION TRANSISTOR
ECONOMICAL FABRICATION PROCESS PRODUCES HIGH-
QUALITY JUNCTION TRANSISTORS
JPL-SC-065 864-10330 01-01

K

KINETIC ENERGY
KINETIC-ENERGY ABSORBER EMPLOYS FRICTIONAL
FORCE BETWEEN MATING CYLINDERS
LEWIS-75 863-10442 01-05

L

LAMP
IGNITING SYSTEM FOR MERCURY VAPOR LAMPS PRO-
TECTS TRANSISTORIZED SUSTAINING SUPPLY
JPL-421 863-10262 01-01

LATHE
LATHE CONVERTED FOR GRINDING ASPHERIC SURFACES
GSFC-115 863-10556 01-05

LEAD
METALS PLATED ON FLUOROCARBON POLYMERS
JPL-544 863-10612 01-03

LEAD OXIDE
LEAD OXIDE CERAMIC MAKES EXCELLENT HIGH-
TEMPERATURE LUBRICANT
LEWIS-144 864-10116 01-03

LEAKAGE
VENTED PISTON SEAL PREVENTS FLUID LEAKAGE
BETWEEN TWO CHAMBERS
JPL-179 863-10141 01-05

SELF SEALING DISCONNECT FOR TUBING FORMS METAL
SEAL AFTER BREAKAWAY
JPL-354 863-10226 01-05

SUBJECT INDEX

LOOP

LENS			LIQUID HELIUM		
LATHE CONVERTED FOR GRINDING ASPHERIC SURFACES			CRYOGENIC FILTER METHOD PRODUCES SUPER-PURE		
GSFC-115	B63-10556	01-05	HELIUM AND HELIUM ISOTOPES		
			JPL-374	B63-10235	01-03
LIGHT			LIQUID LEVEL		
VARIABLE LIGHT SOURCE WITH A MILLION-TO-ONE			LIQUID-LEVEL METER HAS NO MOVING PARTS		
INTENSITY RATIO			M-FS-3	B63-10378	01-03
JPL-W00-008	B63-10424	01-03			
LIGHT INTENSITY			LIQUID MERCURY		
VARIABLE LIGHT SOURCE WITH A MILLION-TO-ONE			LIQUID SWITCH IS REMOTELY OPERATED BY LOW DC		
INTENSITY RATIO			VOLTAGE		
JPL-W00-008	B63-10424	01-03	GSFC-119	B63-10599	01-01
LIGHT SOURCE			LIQUID NITROGEN		
FRESNEL CUP REFLECTOR DIRECTS MAXIMUM ENERGY			HELICAL TUBE SEPARATES NITROGEN GAS FROM		
FROM LIGHT SOURCE			LIQUID NITROGEN		
JPL-424	B63-10263	01-03	JPL-398	B63-10251	01-05
			CRYOPUMPING OF HYDROGEN IN VACUUM CHAMBERS IS		
MIRROR DEVICE ALIGNS MACHINE SURFACE PERPEN-			AIDED BY CATALYTIC OXIDATION OF HYDROGEN		
DICULAR TO SIGHT LINES			LEWIS-15	B63-10340	01-05
W00-5	B63-10421	01-02			
			LITHIUM ALLOY		
VARIABLE LIGHT SOURCE WITH A MILLION-TO-ONE			LIGHTWEIGHT MAGNESIUM-LITHIUM ALLOYS SHOW		
INTENSITY RATIO			PROMISE		
JPL-W00-008	B63-10424	01-03	M-FS-17	B63-10389	01-03
			LITHIUM FLUORIDE		
ATTACHMENT CONVERTS MICROSCOPE TO POINT SOURCE			CESIUM IODIDE CRYSTALS FUSED TO VACUUM TUBE		
AUTOCOLLIMATOR			FACEPLATES		
JPL-499	B64-10124	01-05	GSFC-67	B63-10476	01-03
			LOAD FACTOR		
ELECTRONIC DEVICE SIMULATES RESPIRATION RATE			RAPID BILLET LOADER AIDS EXTRUSION OF REFRAC-		
AND DEPTH			TORY METALS		
MSC-89	B64-10255	01-01	LEWIS-50	B63-10354	01-05
LIGHTWEIGHT			RING COUNTER MAY BE ADVANCED OR RETARDED BY		
BREAK-UP OF METAL TUBE MAKES ONE-TIME SHOCK			COMMAND SIGNAL		
ABSORBER, BARS REBOUND			GSFC-101	B64-10144	01-01
LANGLEY-1A	B63-10304	01-05			
			LOADING		
LIGHTWEIGHT MAGNESIUM-LITHIUM ALLOYS SHOW			SELF-BALANCING BEAM PERMITS SAFE, EASY LOAD		
PROMISE			HANDLING UNDER OVERHANG		
M-FS-17	B63-10389	01-03	M-FS-84	B63-10571	01-05
			CIRCUIT CONTROLS TRANSIENTS IN SCR INVERTERS		
COMFORTABLE, LIGHTWEIGHT SAFETY HELMET HOLDS			GSFC-120	B63-10600	01-01
RADIO TRANSMITTER, RECEIVER			BUCKLE JOINS WEB STRAPS QUICKLY, ADJUSTS		
MSC-53	B64-10015	01-05	EASILY		
			LANGLEY-21	B64-10119	01-05
LINEAR SYSTEM			PTC THERMISTOR PROTECTS MULTILOADED POWER		
SIMPLE CIRCUIT PROVIDES ADJUSTABLE VOLTAGE			SUPPLIES		
WITH LINEAR TEMPERATURE VARIATION			GSFC-236	B64-10281	01-01
JPL-W00-029	B63-10537	01-01			
			LOADING APPARATUS		
VOLTAGE GENERATOR SWEEPS OSCILLATOR FREQUENCY			RAPID BILLET LOADER AIDS EXTRUSION OF REFRAC-		
LINEARLY WITH TIME			TORY METALS		
M-FS-219	B64-10320	01-01	LEWIS-50	B63-10354	01-05
LINEARITY					
RASTER LINEARITY OF VIDEO CAMERAS CALIBRATED			LOGIC CIRCUIT		
WITH PRECISION TESTER			FREQUENCY-SHIFT-KEYER CIRCUIT IMPROVES PCM		
GSFC-200	B64-10209	01-01	CONVERSION FOR RADIO TRANSMISSION		
			GSFC-80	B63-10511	01-01
LINK			COMPUTER CIRCUIT WILL FIT ON SINGLE SILICON		
ELECTROMECHANICALLY OPERATED CAMERA SHUTTER			CHIP		
PROVIDES UNIFORM EXPOSURE			JPL-513	B63-10514	01-01
JPL-357	B63-10227	01-01	DIGITAL LOGIC ELEMENTS PROVIDE ADDITIONAL		
			FUNCTIONS FROM ANALOG INPUT		
LIQUID			MSC-64		
LEVEL OF SUPER-COLD LIQUIDS AUTOMATICALLY			RING COUNTER MAY BE ADVANCED OR RETARDED BY		
MAINTAINED BY LEVELOMETER			COMMAND SIGNAL		
JPL-397	B63-10250	01-01	GSFC-101	B64-10144	01-01
			NOVEL CIRCUIT COMBINES PULSE STRETCHER WITH		
SPECIAL PLIERS CONNECT HOSE CONTAINING LIQUID			NOR GATE		
UNDER PRESSURE			GSFC-187	B64-10150	01-01
JPL-IT-1003	B63-10291	01-05			
			LOOP		
TOOL FACILITATES SEALING OF METAL FILL TUBES			BANDWIDTH SWITCHING IS TRANSIENT-FREE, AVOIDS		
MSC-24	B63-10519	01-05	LOSS OF LOOP LOCK		
			W00-054	B64-10349	01-01
FILLER DEVICE FOR HANDLING HOT CORROSIVE					
MATERIALS					
MSC-85	B64-10166	01-03			
LIQUID FLOW					
METER ACCURATELY MEASURES FLOW OF LOW-CONDUCT-					
IVITY FLUIDS					
JPL-0021	B63-10280	01-01			

LOW FREQUENCY

SUBJECT INDEX

LOW FREQUENCY
NEW LOW-LEVEL A-C AMPLIFIER PROVIDES ADJUST-
ABLE NOISE CANCELLATION AND AUTOMATIC TEMPERA-
TURE COMPENSATION
ARC-2 863-10003 01-04

HIGH-PASS RF COAXIAL FILTER REJECTS DC AND LOW
FREQUENCY SIGNALS
GSFC-73 864-10173 01-01

LOW PASS FILTER
COMPUTER DETERMINES HIGH-FREQUENCY PHASE
STABILITY
GSFC-113 863-10555 01-01

LOW POWER
RADIANT HEATER FOR VACUUM FURNACES OFFERS HIGH
STRUCTURAL RIGIDITY, LOW HEAT LOSS
LEWIS-39 863-10342 01-01

LOW TEMPERATURE ENVIRONMENT
GALLIUM USEFUL BEARING LUBRICANT IN HIGH-
VACUUM ENVIRONMENT
LEWIS-12 863-10337 01-03

LUBRICANT
GALLIUM USEFUL BEARING LUBRICANT IN HIGH-
VACUUM ENVIRONMENT
LEWIS-12 863-10337 01-03

MOLYBDENUM DISULFIDE MIXTURES MAKE EFFECTIVE
HIGH-VACUUM LUBRICANTS
M-FS-54 863-10453 01-03

LUBRICATING OIL
OHMMETER SENSES DEPLETION OF LUBRICANT IN
JOURNAL BEARINGS
LEWIS-37 864-10042 01-01

LUBRICATION
GATE VALVE WITH CERAMIC-COATED BASE OPERATES
AT HIGH TEMPERATURES
ARC-23 863-10562 01-03

LUNAR GRAVITATIONAL EFFECT
TECHNIQUE SIMULATES EFFECT OF REDUCED GRAVITY
LANGLEY-44 864-10146 01-04

LUNG
DEVICE INDUCES LUNGS TO MAINTAIN KNOWN
CONSTANT PRESSURE
MSC-50 864-10108 01-04

M

MACHINE TOOL
SETTING OF ANGLES ON MACHINE TOOLS SPEEDED BY
MAGNETIC PROTRACTOR
ARC-5 863-10006 01-01

SLEEVE AND CUTTER SIMPLIFY DISCONNECTING
WELDED JOINT IN TUBING
JPL-384 863-10240 01-05

MACHINING
METAL-BENDING BRAKE FACILITATES LIGHTWEIGHT,
CLOSE-TOLERANCE FABRICATION
ARC-29 864-10069 01-05

MICROMACHINING PRODUCES OPTICAL APERTURES TO
MICRON DIMENSIONS
GSFC-206 864-10211 01-05

MAGNESIUM
NEW METHOD FORMS BOND LINE FREE OF VOIDS
LANGLEY-20 863-10558 01-05

MAGNESIUM ALLOY
LIGHTWEIGHT MAGNESIUM-LITHIUM ALLOYS SHOW
PROMISE
M-FS-17 863-10389 01-03

MAGNET
UNMANNED SEISMOMETER LEVELS SELF, CORRECTS
DRIFT ERRORS
GSFC-100 863-10551 01-01

BALL BEARING USED IN DESIGN OF RUGGED FLOW-
METER

LEWIS-159 864-10170 01-05

MAGNETIC CIRCUIT
TRANSFLUXOR CIRCUIT AMPLIFIES SENSING CURRENT
FOR COMPUTER MEMORIES
JPL-406 863-10255 01-01

MAGNETIC CORE
TRANSFLUXOR CIRCUIT AMPLIFIES SENSING CURRENT
FOR COMPUTER MEMORIES
JPL-406 863-10255 01-01

NEW SINTERING PROCESS ADJUSTS MAGNETIC VALUE
OF FERRITE CORES
GSFC-129 863-10606 01-01

BLOCKING OSCILLATOR USES LOW TRIGGERING
VOLTAGE
MSC-58 864-10017 01-01

MOLDED ELESTOMER PROVIDES COMPACT FERRITE-CORE
HOLDER, SIMPLIFIES ASSEMBLY
JPL-584 864-10084 01-05

MAGNETIC FIELD
SUPERCOLD TECHNIQUE DUPLICATES MAGNETIC FIELD
IN SECOND SUPERCONDUCTOR
JPL-376 863-10237 01-05

SHAPED SUPERCONDUCTOR CYLINDER RETAINS INTENSE
MAGNETIC FIELD
JPL-381 863-10238 01-01

MAGNETIC FIELD INTENSITY
SHAPED SUPERCONDUCTOR CYLINDER RETAINS INTENSE
MAGNETIC FIELD
JPL-381 863-10238 01-01

MAGNETIC MEMORY
TRANSFLUXOR CIRCUIT AMPLIFIES SENSING CURRENT
FOR COMPUTER MEMORIES
JPL-406 863-10255 01-01

MAGNETIC TAPE
LOW-COST TAPE SYSTEM MEASURES VELOCITY OF
ACCELERATION
GSFC-85 863-10512 01-01

METAL STRIP FORMS 21 FOOT BOOM, ROLLS UP FOR
COMPACT STORAGE
GSFC-151 864-10011 01-05

COMPACT CARTRIDGE DRIVES CODED TAPE AT
CONSTANT READOUT SPEED
JPL-472 864-10222 01-01

MAGNETIC TAPE RECORDER
SMALL DIGITAL RECORDING HEAD HAS PARALLEL BIT
CHANNELS, MINIMIZES CROSS TALK
JPL-0029 863-10284 01-01

MAGNETISM
SETTING OF ANGLES ON MACHINE TOOLS SPEEDED BY
MAGNETIC PROTRACTOR
ARC-5 863-10006 01-01

MANDREL
VACUUM FORMING OF THERMOPLASTIC SHEET RESULTS
IN LOW-COST INVESTMENT CASTING PATTERNS
ARC-7 863-10008 01-05

MANUAL CONTROL
HEAVY-DUTY STAPLE REMOVER OPERATED BY HAND
JPL-IT-1004 863-10292 01-05

MATHEMATICS /GEN/
MECHANICAL PROPERTIES OF PLASTICS PREDETERMIN-
ED BY EMPIRICAL METHOD
ARC-28 864-10068 01-03

MEASURES
OIL-SMEARED MODELS AID WIND TUNNEL
MEASUREMENTS
LANGLEY-4 863-10311 01-03

ULTRA-SENSITIVE TRANSDUCER ADVANCES MICRO-
MEASUREMENT RANGE
ARC-26 864-10004 01-01

SUBJECT INDEX

MICROWAVE FILTER

MEASURING APPARATUS

LOW-COST TAPE SYSTEM MEASURES VELOCITY OF
ACCELERATION
GSFC-85 863-10512 01-01

ULTRA-SENSITIVE TRANSDUCER ADVANCES MICRO-
MEASUREMENT RANGE
ARC-26 864-10004 01-01

IMPROVED INSERTION-LOSS TESTER
JPL-358 864-10080 01-01

APPARATUS MEASURES CONCENTRATION OF SUSPENDED
DROPLETS IN GAS STREAMS
LANGLEY-31 864-10237 01-01

MECHANICAL DRAWING

BUILT-IN TEMPLATES SPEED UP PROCESS FOR MAKING
ACCURATE MODELS
LANGLEY-23 863-10526 01-05

USE OF PHOTOGRAPHS SPEEDS INSPECTION OF
PRINTED-CIRCUIT BOARDS
MSC-72 864-10118 01-01

MECHANICAL PROPERTY

MECHANICAL PROPERTIES OF PLASTICS PREDETERMIN-
ED BY EMPIRICAL METHOD
ARC-28 864-10068 01-03

MECHANICAL SYSTEM

ELECTROMECHANICALLY OPERATED CAMERA SHUTTER
PROVIDES UNIFORM EXPOSURE
JPL-357 863-10227 01-01

MECHANISM

SIMPLE MECHANISM COMBINES POSITIVE LOCKING AND
QUICK-RELEASE FEATURES
WOO-4 863-10420 01-05

MELTING POINT

INTEGRAL COOLANT CHANNELS SIMPLY MADE BY MELT-
OUT METHOD
M-FS-91 863-10497 01-05

MERCURY ARC

EMISSION TESTER FOR HIGH-POWER VACUUM TUBES
JPL-628 864-10158 01-01

MERCURY LIGHT

IGNITING SYSTEM FOR MERCURY VAPOR LAMPS PRO-
TECTS TRANSISTORIZED SUSTAINING SUPPLY
JPL-421 863-10262 01-01

MERCURY VAPOR

IGNITING SYSTEM FOR MERCURY VAPOR LAMPS PRO-
TECTS TRANSISTORIZED SUSTAINING SUPPLY
JPL-421 863-10262 01-01

METAL

HIGH PURITY ELECTROFORMING YIELDS SUPERIOR
METAL MODELS
ARC-6 863-10007 01-05

PACKLESS VALVE WITH ALL-METAL SEAL HANDLES
WIDE TEMPERATURE, PRESSURE RANGE
JPL-361 863-10228 01-05

BREAK-UP OF METAL TUBE MAKES ONE-TIME SHOCK
ABSORBER, BARS REBOUND
LANGLEY-1A 863-10304 01-05

TOOL FACILITATES SEALING OF METAL FILL TUBES
MSC-24 863-10519 01-05

REFRACTORY THERMAL INSULATION FOR SMOOTH
METAL SURFACES
M-FS-160 864-10099 01-03

MOUNTING FOR DIODES PROVIDES EFFICIENT HEAT
SINK
M-FS-197 864-10283 01-01

METAL-METAL BONDING

STRINGENT CLEANING TECHNIQUE ASSURES RELIABLE
EPOXY BOND
GSFC-161 864-10142 01-03

METAL PLATE

BUILT-IN TEMPLATES SPEED UP PROCESS FOR MAKING
ACCURATE MODELS
LANGLEY-23 863-10526 01-05

METAL REINFORCEMENT

METHOD OF WELDING JOINT IN CLOSED VESSEL
IMPROVES QUALITY OF SEAM
JPL-170 863-10139 01-05

METAL WORKING

RAPID BILLET LOADER AIDS EXTRUSION OF REFRAC-
TORY METALS
LEWIS-50 863-10354 01-05

GUIDE FOR EXTRUSION DIES ELIMINATES
STRAIGHTENING OPERATION
LEWIS-152 864-10014 01-05

METEOROID

ULTRA-SENSITIVE TRANSDUCER ADVANCES MICRO-
MEASUREMENT RANGE
ARC-26 864-10004 01-01

METER

LIQUID-LEVEL METER HAS NO MOVING PARTS
M-FS-3 863-10378 01-03

MICROINSTRUMENTATION

MICROMACHINING PRODUCES OPTICAL APERTURES TO
MICRON DIMENSIONS
GSFC-206 864-10211 01-05

MICROMETEOROID

IMPROVED SENSOR COUNTS MICROMETEOROID
PENETRATIONS
LEWIS-76 863-10443 01-01

ULTRA-SENSITIVE TRANSDUCER ADVANCES MICRO-
MEASUREMENT RANGE
ARC-26 864-10004 01-01

MICROMOTOR

COMPUTER CIRCUIT WILL FIT ON SINGLE SILICON
CHIP
JPL-513 863-10514 01-01

MICROPHONE

SMALL FOAMED POLYSTYRENE SHIELD PROTECTS LOW-
FREQUENCY MICROPHONES FROM WIND NOISE
M-FS-123 863-10579 01-01

MICROSCOPE

ATTACHMENT CONVERTS MICROSCOPE TO POINT SOURCE
AUTOCOLLIMATOR
JPL-499 864-10124 01-05

MICROMACHINING PRODUCES OPTICAL APERTURES TO
MICRON DIMENSIONS
GSFC-206 864-10211 01-05

MICROWAVE

NOVEL HORN ANTENNA REDUCES SIDE LOBES,
IMPROVES RADIATION PATTERN
JPL-425 863-10264 01-01

MICROWAVE ANTENNA

FLANGE ON MICROWAVE ANTENNA SUBREFLECTOR CUTS
GROUND NOISE
JPL-362 863-10229 01-01

MICROWAVE ATTENUATION

MODIFIED FILTER PREVENTS CONDUCTION OF MICRO-
WAVE SIGNALS ALONG HIGH-VOLTAGE POWER SUPPLY
LEADS
JPL-63 863-10091 01-01

MICROWAVE CIRCUIT

DOUBLE-THROW MICROWAVE DEVICE SWITCHES TWO
LINES QUICKLY
JPL-410 863-10258 01-01

MICROWAVE FILTER

MODIFIED FILTER PREVENTS CONDUCTION OF MICRO-
WAVE SIGNALS ALONG HIGH-VOLTAGE POWER SUPPLY
LEADS
JPL-63 863-10091 01-01

MICROWAVE FREQUENCY

SUBJECT INDEX

MICROWAVE FREQUENCY

MODIFIED FILTER PREVENTS CONDUCTION OF MICRO-
WAVE SIGNALS ALONG HIGH-VOLTAGE POWER SUPPLY
LEADS

JPL-63 863-10091 01-01

CRYOGENIC WAVEGUIDE WINDOW IS SEALED WITH
PLASTIC FOAM

JPL-559 863-10613 01-01

MICROWAVE SWITCHING

DOUBLE-THROW MICROWAVE DEVICE SWITCHES TWO
LINES QUICKLY

JPL-410 863-10258 01-01

MINIATURIZATION

WELDED PRESSURE TRANSDUCER MADE AS SMALL AS
1/8TH-INCH IN DIAMETER

ARC-11 863-10429 01-03

MIRROR

VARIABLE-TRANSPARENCY WALL REGULATES TEMPERA-
TURES OF STRUCTURES

LANGLEY-25 863-10528 01-03

MISSILE

HIGH PURITY ELECTROFORMING YIELDS SUPERIOR
METAL MODELS

ARC-6 863-10007 01-05

MODULE

PORTABLE DISPLAY PANELING HAS WIDE USE, EASY
TAKE DOWN AND ASSEMBLY

ARC-17 863-10435 01-05

MOLD

IMPROVED MOLYBDENUM DISULFIDE-SILVER MOTOR
BRUSHES HAVE EXTENDED LIFE

M-FS-64 863-10479 01-03

REFRACTORY CERAMIC HAS WIDE USAGE, LOW
FABRICATION COST

M-FS-67 863-10481 01-03

PLASTIC MOLDS REDUCE COST OF ENCAPSULATING
ELECTRIC CABLE CONNECTORS

M-FS-69 863-10568 01-05

PRESSURE MOLDING OF POWDERED MATERIALS
IMPROVED BY RUBBER MOLD INSERT

WOO-100 864-10270 01-03

MOLECULAR FLOW

TEST DEVICE PREVENTS MOLECULAR BOUNCE-BACK

GSFC-82 863-10546 01-03

MOLECULE

TEST DEVICE PREVENTS MOLECULAR BOUNCE-BACK

GSFC-82 863-10546 01-03

MOLYBDENUM SULFIDE

MOLYBDENUM DISULFIDE MIXTURES MAKE EFFECTIVE
HIGH-VACUUM LUBRICANTS

M-FS-54 863-10453 01-03

IMPROVED MOLYBDENUM DISULFIDE-SILVER MOTOR
BRUSHES HAVE EXTENDED LIFE

M-FS-64 863-10479 01-03

MONITOR

CIRCUIT SWITCHES LATCHING RELAY IN RESPONSE TO
SIGNALS OF DIFFERENT POLARITY

WOO-055 863-10508 01-01

SIMPLE CIRCUIT CONTINUOUSLY MONITORS
THERMOCOUPLE SENSOR

M-FS-61 863-10567 01-01

MOTOR SYSTEM

IMPROVED MOLYBDENUM DISULFIDE-SILVER MOTOR
BRUSHES HAVE EXTENDED LIFE

M-FS-64 863-10479 01-03

QUICK-ACTING CLUTCH DISENGAGES IDLE DRIVE
MOTOR

GSFC-143 864-10028 01-05

VEHICLE WALKS ON VARIED TERRAIN, CAN ASSIST
HANDICAPPED PERSONS

WOO-005

864-10274 01-05

MULTIPLIER

COMPUTER DETERMINES HIGH-FREQUENCY PHASE

STABILITY
GSFC-113 863-10555 01-01

MULTIVIBRATOR

MONOSTABLE CIRCUIT WITH TUNNEL DIODE HAS FAST
RECOVERY

GSFC-132 863-10603 01-01

TEMPERATURE-SENSITIVE NETWORK DRIVES ASTABLE

MULTIVIBRATOR
GSFC-137 863-10609 01-01

N

N-P-N JUNCTION

TWO-STAGE EMITTER FOLLOWER IS TEMPERATURE
STABILIZED

MSC-20 863-10493 01-01

NEOPRENE

CHAIN FRICTION SYSTEM GIVES POSITIVE, REVERS-
IBLE DRIVE

ARC-8 863-10009 01-05

ELASTOMERS BONDED TO METAL SURFACES SEAL
ELECTROCHEMICAL CELLS

GSFC-168 864-10113 01-03

NICKEL

ELLIPSOIDAL OPTICAL REFLECTORS REPRODUCED BY
ELECTROFORMING

GSFC-92 863-10547 01-05

NITROGEN

HELICAL TUBE SEPARATES NITROGEN GAS FROM

LIQUID NITROGEN
JPL-398 863-10251 01-05

COMPRESSED GAS SYSTEM OPERATES SEMITRAILER
BRAKES DURING WINCHING OPERATION

JPL-0036 864-10306 01-05

NOISE ATTENUATION

SMALL FOAMED POLYSTYRENE SHIELD PROTECTS LOW-
FREQUENCY MICROPHONES FROM WIND NOISE

M-FS-123 863-10579 01-01

NOISE ELIMINATION

NEW LOW-LEVEL A-C AMPLIFIER PROVIDES ADJUST-
ABLE NOISE CANCELLATION AND AUTOMATIC TEMPERA-
TURE COMPENSATION

ARC-2 863-10003 01-04

FLANGE ON MICROWAVE ANTENNA SUBREFLECTOR CUTS

GROUND NOISE
JPL-362 863-10229 01-01

NOISE INTENSITY

SMALL FOAMED POLYSTYRENE SHIELD PROTECTS LOW-
FREQUENCY MICROPHONES FROM WIND NOISE

M-FS-123 863-10579 01-01

NOISE REDUCTION

FLANGE ON MICROWAVE ANTENNA SUBREFLECTOR CUTS
GROUND NOISE

JPL-362 863-10229 01-01

NOISE SUPPRESSOR

NEW LOW-LEVEL A-C AMPLIFIER PROVIDES ADJUST-
ABLE NOISE CANCELLATION AND AUTOMATIC TEMPERA-
TURE COMPENSATION

ARC-2 863-10003 01-04

NOVEL HORN ANTENNA REDUCES SIDE LOBES,
IMPROVES RADIATION PATTERN

JPL-425 863-10264 01-01

SMALL DIGITAL RECORDING HEAD HAS PARALLEL BIT
CHANNELS, MINIMIZES CROSS TALK

JPL-0029 863-10284 01-01

FIELD-EFFECT TRANSISTOR IMPROVES ELECTROMETER
AMPLIFIER

ARC-36 864-10143 01-01

NOSE CONE

HIGH PURITY ELECTROFORMING YIELDS SUPERIOR
METAL MODELS
ARC-6 863-10007 01-05

NOTCH

APPARATUS OF SMALL SIZE CAN BE EXTENDED INTO
LONG, RIGID BOOM
JPL-305 863-10200 01-05

NOZZLE

QUICK-HARDENING PROBLEMS ARE ELIMINATED WITH
SPRAY GUN MODIFICATION WHICH MIXES RESIN AND
ACCELERATOR LIQUIDS DURING APPLICATION
LANGLEY-6A 863-10318 01-03

IMPROVED TECHNIQUE FOR LOCALIZING ELECTRO-
POLISHING FEATURES NOVEL NOZZLES
WOO-101 864-10271 01-01

NUTS AND BOLTS

SIMPLE MECHANISM COMBINES POSITIVE LOCKING AND
QUICK-RELEASE FEATURES
WOO-4 863-10420 01-05

INSTRUMENT ADJUSTMENT KNOB LOCKS TO PREVENT
ACCIDENTAL MALADJUSTMENT
M-FS-190 864-10249 01-05

NYLON

PORTABLE FLOORING PROTECTS FINISHED SURFACES,
IS EASILY MOVED
M-FS-15 863-10387 01-05



OHMMETER

OHMMETER SENSES DEPLETION OF LUBRICANT IN
JOURNAL BEARINGS
LEWIS-37 864-10042 01-01

CONTINUITY TESTER SCREENS OUT FAULTY SOCKET
CONNECTIONS
JPL-596 864-10065 01-01

OIL

OIL-SMEARED MODELS AID WIND TUNNEL
MEASUREMENTS
LANGLEY-4 863-10311 01-03

FINE-PARTICLE FILTER PREVENTS DAMAGE TO VACUUM
PUMPS
LEWIS-106 863-10489 01-05

OLEFIN

VARIABLE-TRANSPARENCY WALL REGULATES TEMPERA-
TURES OF STRUCTURES
LANGLEY-25 863-10528 01-03

OPTICAL INSTRUMENT

OPTICS USED TO MEASURE TORQUE AT HIGH
ROTATIONAL SPEEDS
LEWIS-13 863-10338 01-01

MIRROR DEVICE ALIGNS MACHINE SURFACE PERPEN-
DICULAR TO SIGHT LINES
WOO-5 863-10421 01-02

ELLIPSOIDAL OPTICAL REFLECTORS REPRODUCED BY
ELECTROFORMING
GSFC-92 863-10547 01-05

PLASTIC FILMS FOR REFLECTIVE SURFACES
REPRODUCED FROM MASTERS
GSFC-188 864-10151 01-03

MICROMACHINING PRODUCES OPTICAL APERTURES TO
MICRON DIMENSIONS
GSFC-206 864-10211 01-05

OPTICAL METHOD

LIQUID-LEVEL METER HAS NO MOVING PARTS
M-FS-3 863-10378 01-03

OPTICAL SENSOR

LOW-COST TAPE SYSTEM MEASURES VELOCITY OF
ACCELERATION
GSFC-85 863-10512 01-01

OPTICS

ATTACHMENT CONVERTS MICROSCOPE TO POINT SOURCE
AUTOCOLLIMATOR
JPL-499 864-10124 01-05

ORIFICE

ELASTIC ORIFICE AUTOMATICALLY REGULATES GAS
BEARINGS
JPL-135 863-10123 01-05

MODIFIED GAS BEARING IS ADJUSTABLE TO OPTIMUM
STIFFNESS RATIO
M-FS-145 864-10050 01-05

OSCILLATOR

INCREASED PERFORMANCE RELIABILITY OBTAINED
WITH DUAL /REDUNDANT/ OSCILLATOR SYSTEM
GSFC-36 863-10027 01-01

FREQUENCY-SHIFT-KEYER CIRCUIT IMPROVES PCM
CONVERSION FOR RADIO TRANSMISSION
GSFC-80 863-10511 01-01

TRANSISTORIZED TRIGGER CIRCUIT IS FREQUENCY-
CONTROLLABLE
GSFC-111 863-10553 01-01

HIGHLY EFFICIENT SQUARE-WAVE OSCILLATOR OPER-
ATOR AT HIGH POWER LEVELS
GSFC-112 863-10554 01-01

COMPUTER DETERMINES HIGH-FREQUENCY PHASE
STABILITY
GSFC-113 863-10555 01-01

BLOCKING OSCILLATOR USES LOW TRIGGERING
VOLTAGE
MSC-58 864-10017 01-01

ELECTRONIC DEVICE SIMULATES RESPIRATION RATE
AND DEPTH
MSC-89 864-10255 01-01

VOLTAGE GENERATOR SWEEPS OSCILLATOR FREQUENCY
LINEARLY WITH TIME
M-FS-219 864-10320 01-01

OUTPUT

DOUBLE-THROW MICROWAVE DEVICE SWITCHES TWO
LINES QUICKLY
JPL-410 863-10258 01-01

SIMPLE CIRCUIT PROVIDES ADJUSTABLE VOLTAGE
WITH LINEAR TEMPERATURE VARIATION
JPL-WOO-029 863-10537 01-01

TRANSISTORIZED CONVERTER PROVIDES NONDISSIPA-
TIVE REGULATION
GSFC-238 864-10305 01-01

VOLTAGE GENERATOR SWEEPS OSCILLATOR FREQUENCY
LINEARLY WITH TIME
M-FS-219 864-10320 01-01

OXIDATION

CRYOPUMPING OF HYDROGEN IN VACUUM CHAMBERS IS
AIDED BY CATALYTIC OXIDATION OF HYDROGEN
LEWIS-15 863-10340 01-05

OXIDE

REFERENCE BLACK BODY IS COMPACT, CONVENIENT TO
USE
ARC-3 863-10004 01-03

REMOVABLE PREHEATER ELEMENTS IMPROVE OXIDE
INDUCTION FURNACE
JPL-288 863-10193 01-01

OXYGEN

MINIATURE OXYGEN-HYDROGEN CUTTING TORCH
CONSTRUCTED FROM HYPODERMIC NEEDLE
JPL-545 863-10517 01-05

P

P-N-P JUNCTION

TWO-STAGE EMITTER FOLLOWER IS TEMPERATURE
STABILIZED
MSC-20 863-10493 01-01

PACKAGING

SUBJECT INDEX

PACKAGING

MODULAR CHASSIS SIMPLIFIES PACKAGING AND
INTERCONNECTING OF CIRCUIT BOARDS
JPL-236A B63-10174 01-01

NEW PACKAGE FOR BELLEVILLE SPRING PERMITS RATE
CHANGE, EASY DISASSEMBLY
JPL-392 B63-10247 01-05

LIGHTWEIGHT MAGNESIUM-LITHIUM ALLOYS SHOW
PROMISE
M-FS-17 B63-10389 01-03

PANEL

PORTABLE DISPLAY PANELING HAS WIDE USE, EASY
TAKE DOWN AND ASSEMBLY
ARC-17 B63-10435 01-05

ELECTRONIC ASSEMBLY RACK PANELS SNAP ON AND
OFF
GSFC-59 B64-10121 01-05

INSTRUMENT ADJUSTMENT KNOB LOCKS TO PREVENT
ACCIDENTAL MALADJUSTMENT
M-FS-190 B64-10249 01-05

PARTICLE

FINE-MESH SCREEN MADE BY SIMPLIFIED METHOD
WOO-104 B64-10282 01-03

PARTICULATE FILTER

FINE-PARTICLE FILTER PREVENTS DAMAGE TO VACUUM
PUMPS
LEWIS-106 B63-10489 01-05

PAYLOAD

SPEED-SENSING DEVICE AIDS CRANE OPERATORS
WS-4 B64-10006 01-05

PENDULUM APPARATUS

VISCOUS-PENDULUM DAMPER SUPPRESSES STRUCTURAL
VIBRATIONS
LANGLEY-45 B64-10272 01-05

PENETRATING PARTICLE

IMPROVED SENSOR COUNTS MICROMETEOROID
PENETRATIONS
LEWIS-76 B63-10443 01-01

PHASE

COMPUTER DETERMINES HIGH-FREQUENCY PHASE
STABILITY
GSFC-113 B63-10555 01-01

PHOTOCONDUCTIVE CELL

SOLAR-ANGLE SENSOR HAS NO MOVING PARTS
JPL-418 B63-10260 01-02

PHOTOELASTIC STRESS MEASUREMENT

SERVO SYSTEM FACILITATES PHOTOELASTIC STRAIN
MEASUREMENTS ON RESINS
JPL-504 B64-10280 01-01

PHOTOELECTRIC APPARATUS

LIQUID-LEVEL METER HAS NO MOVING PARTS
M-FS-3 B63-10378 01-03

PHOTOELECTRIC CELL

SOLAR-ANGLE SENSOR HAS NO MOVING PARTS
JPL-418 B63-10260 01-02

NEW METHOD USED TO FABRICATE GALLIUM ARSENIDE
PHOTOVOLTAIC DEVICE
WOO-062 B64-10019 01-01

PHOTOGRAPH

BUILT-IN TEMPLATES SPEED UP PROCESS FOR MAKING
ACCURATE MODELS
LANGLEY-23 B63-10526 01-05

USE OF PHOTOGRAPHS SPEEDS INSPECTION OF
PRINTED-CIRCUIT BOARDS
MSC-72 B64-10118 01-01

PHOTOGRAPHY

FRONT AND BACK PRINTED CIRCUIT LAYOUTS
PRESENTED ON SINGLE SHEET
GSFC-93 B63-10596 01-01

PHOTOMULTIPLIER

VARIABLE LIGHT SOURCE WITH A MILLION-TO-ONE
INTENSITY RATIO
JPL-WOO-008 B63-10424 01-03

PHOTOVOLTAIC EFFECT

PRESSURE TRANSDUCER 3/8-INCH IN SIZE CAN BE
FAIRED INTO SURFACE
WOO-065 B64-10021 01-05

PHYSICAL PROPERTY

TINY SENSOR-TRANSMITTER CAN WITHSTAND EXTREME
ACCELERATION, GIVES DIGITAL OUTPUT
ARC-22 B63-10561 01-01

PHYSIOLOGICAL TELEMETRY

ANALOG DEVICE SIMULATES PHYSIOLOGICAL
WAVEFORMS
MSC-51 B64-10109 01-01

PIEZOELECTRICITY

DEVICE CALIBRATES VIBRATION TRANSDUCERS AT
AMPLITUDES UP TO 20G.
M-FS-86 B63-10572 01-01

ULTRA-SENSITIVE TRANSDUCER ADVANCES MICRO-
MEASUREMENT RANGE
ARC-26 B64-10004 01-01

PRESSURE TRANSDUCER 3/8-INCH IN SIZE CAN BE
FAIRED INTO SURFACE
WOO-065 B64-10021 01-05

PIEZORESISTIVE DEVICE

PRESSURE TRANSDUCER 3/8-INCH IN SIZE CAN BE
FAIRED INTO SURFACE
WOO-065 B64-10021 01-05

PIPELINE

SPECIAL PLIERS CONNECT HOSE CONTAINING LIQUID
UNDER PRESSURE
JPL-IT-1003 B63-10291 01-05

BLADE VALVE ISOLATES COMPARTMENT IN PIPE,
OPENS TO ALLOW FREE FLOW
JPL-585 B64-10188 01-05

PISTON

VENTED PISTON SEAL PREVENTS FLUID LEAKAGE
BETWEEN TWO CHAMBERS
JPL-179 B63-10141 01-05

PIVOT

SOLENOID PERMITS REMOTE CONTROL OF STOP WATCH
AND ASSURES RESTARTING
FRC-17 B63-10024 01-01

PLASTIC

MECHANICAL PROPERTIES OF PLASTICS PREDETERMIN-
ED BY EMPIRICAL METHOD
ARC-28 B64-10068 01-03

PLASTIC COATING

QUICK-HARDENING PROBLEMS ARE ELIMINATED WITH
SPRAY GUN MODIFICATION WHICH MIXES RESIN AND
ACCELERATOR LIQUIDS DURING APPLICATION
LANGLEY-6A B63-10318 01-03

PLASTIC FILM

PLASTIC FILMS FOR REFLECTIVE SURFACES
REPRODUCED FROM MASTERS
GSFC-188 B64-10151 01-03

PLASTIC MATERIAL

PORTABLE FLOORING PROTECTS FINISHED SURFACES,
IS EASILY MOVED
M-FS-15 B63-10387 01-05

A TECHNIQUE FOR MAKING ANIMAL RESTRAINTS
ARC-25 B63-10564 01-05

PLASTIC MOLDS REDUCE COST OF ENCAPSULATING
ELECTRIC CABLE CONNECTORS
M-FS-69 B63-10568 01-05

CRYOGENIC WAVEGUIDE WINDOW IS SEALED WITH
PLASTIC FOAM
JPL-559 B63-10613 01-01

SUBJECT INDEX

PRESSURE MEASUREMENT

MECHANICAL PROPERTIES OF PLASTICS PREDETERMINED BY EMPIRICAL METHOD ARC-28	864-10068	01-03	FREQUENCY MICROPHONES FROM WIND NOISE M-FS-123	B63-10579	01-01
PLASTICIZER MECHANICAL PROPERTIES OF PLASTICS PREDETERMINED BY EMPIRICAL METHOD ARC-28	864-10068	01-03	CRYOGENIC WAVEGUIDE WINDOW IS SEALED WITH PLASTIC FOAM JPL-559	B63-10613	01-01
PLATE DEVICE TRANSMITS ROTARY MOTION THROUGH HERMETICALLY SEALED WALL JPL-303	863-10198	01-05	PORTABILITY PORTABLE FLOORING PROTECTS FINISHED SURFACES, IS EASILY MOVED M-FS-15	B63-10387	01-05
LIGHTWEIGHT UNIVERSAL JOINT TRANSMITS BOTH TORQUE AND THRUST JPL-375	863-10236	01-05	PORTABLE DISPLAY PANFLING HAS WIDE USE, EASY TAKE DOWN AND ASSEMBLY ARC-17	B63-10435	01-05
SIMPLE MECHANISM COMBINES POSITIVE LOCKING AND QUICK-RELEASE FEATURES WOO-4	863-10420	01-05	POWDERED METAL MODIFIED FILTER PREVENTS CONDUCTION OF MICRO-WAVE SIGNALS ALONG HIGH-VOLTAGE POWER SUPPLY LEADS JPL-63	B63-10091	01-01
UNMANNED SEISMOMETER LEVELS SELF, CORRECTS DRIFT ERRORS GSFC-100	863-10551	01-01	POWER GAIN NEW APPARATUS INCREASES ION BEAM POWER DENSITY LEWIS-73	B63-10440	01-01
PLATFORM APPARATUS MEASURES VERY SMALL THRUSTS WOO-048	864-10284	01-05	POWER SUPPLY IGNITING SYSTEM FOR MERCURY VAPOR LAMPS PROTECTS TRANSISTORIZED SUSTAINING SUPPLY JPL-421	B63-10262	01-01
PLOTTING VEITCH DIAGRAM PLOTTER SIMPLIFIES BOOLEAN FUNCTIONS JPL-385	863-10241	01-05	PTC THERMISTOR PROTECTS MULTILOADED POWER SUPPLIES GSFC-236	B64-10281	01-01
PLUG DESIGN OF VALVE PERMITS SEALING EVEN IF THE STEM IS MISALIGNED LEWIS-38	863-10341	01-05	PRESSING RAPID BILLET LOADER AIDS EXTRUSION OF REFRACTORY METALS LEWIS-50	B63-10354	01-05
CIRCUIT RELIABILITY BOOSTED BY SOLDERING PINS OF DISCONNECT PLUGS TO SOCKETS JPL-447	864-10002	01-01	PRESSURE HIGH-PRESSURE REGULATING SYSTEM PREVENTS PRESSURE SURGES JPL-231	B63-10170	01-05
PNEUMATIC EQUIPMENT PNEUMATIC POWER IS TRANSMITTED THROUGH AIR BEARING MSC-8	864-10141	01-05	SPECIAL PLIERS CONNECT HOSE CONTAINING LIQUID UNDER PRESSURE JPL-IT-1003	B63-10291	01-05
PNEUMOGRAPHY ELECTRONIC DEVICE SIMULATES RESPIRATION RATE AND DEPTH MSC-89	864-10255	01-01	DEVICE INDUCES LUNGS TO MAINTAIN KNOWN CONSTANT PRESSURE MSC-50	B64-10108	01-04
PNEUMOTACHOMETER COUNTS RESPIRATION RATE OF HUMAN SUBJECT MSC-92	864-10259	01-01	PRESSURE APPARATUS UPSETTING BUTT EDGE INCREASES WELD-JOINT STRENGTH M-FS-175	B64-10164	01-05
POLARIZATION CIRCUIT SWITCHES LATCHING RELAY IN RESPONSE TO SIGNALS OF DIFFERENT POLARITY WOO-055	863-10508	01-01	PRESSURE CHAMBER VENTED PISTON SEAL PREVENTS FLUID LEAKAGE BETWEEN TWO CHAMBERS JPL-179	B63-10141	01-05
POLE THREADING HOOK FACILITATES SAFE RECOVERY OF HEAVY LOADS MSC-46	864-10185	01-05	PRESSURE GAUGE RAPID HELIUM-AIR ANALYZER CAN MEASURE OTHER BINARY GAS MIXTURES LANGLEY-16	B63-10557	01-03
POLISHING IMPROVED TECHNIQUE FOR LOCALIZING ELECTRO-POLISHING FEATURES NOVEL NOZZLES WOO-101	864-10271	01-01	PRESSURE GRADIENT PACKLESS VALVE WITH ALL-METAL SEAL HANDLES WIDE TEMPERATURE, PRESSURE RANGE JPL-361	B63-10228	01-05
POLYESTER RESIN MODIFIED FILTER PREVENTS CONDUCTION OF MICRO-WAVE SIGNALS ALONG HIGH-VOLTAGE POWER SUPPLY LEADS JPL-63	863-10091	01-01	PRESSURE MEASUREMENT IMPROVED VARIABLE-RELUCTANCE TRANSDUCER MEASURES TRANSIENT PRESSURES LANGLEY-10	B63-10321	01-01
POLYMER METALS PLATED ON FLUOROCARBON POLYMERS JPL-544	863-10612	01-03	FLUID-PRESSURE METER CAN BE CALIBRATED WITHOUT REMOVAL FROM FLOW LINE M-FS-98	B63-10502	01-05
ENCAPSULATION PROCESS STERILIZES AND PRESERVES SURGICAL INSTRUMENTS JPL-484	864-10066	01-05	PRECISION GAGE MEASURES ULTRAHIGH VACUUM LEVELS GSFC-114	B63-10597	01-01
POLYSTYRENE SMALL FOAMED POLYSTYRENE SHIELD PROTECTS LOW-			MULTIPLE PORT PRESSURE SCANNER VALVE FEATURES GREATER ACCURACY, QUICKER DATA JPL-555	B64-10031	01-05

PRESSURE REGULATOR

SUBJECT INDEX

PRESSURE REGULATOR HIGH-PRESSURE REGULATING SYSTEM PREVENTS PRESSURE SURGES JPL-231	863-10170	01-05	GSFC-234	864-10277	01-05
PRESSURE TRANSDUCER IMPROVED VARIABLE-RELUCTANCE TRANSDUCER MEAS- URES TRANSIENT PRESSURES LANGLEY-10	863-10321	01-01	PULSE CODE MODULATION /PCM/ FREQUENCY-SHIFT-KEYER CIRCUIT IMPROVES PCM CONVERSION FOR RADIO TRANSMISSION GSFC-80	863-10511	01-01
WELDED PRESSURE TRANSDUCER MADE AS SMALL AS 1/8TH-INCH IN DIAMETER ARC-11	863-10429	01-03	PULSE DURATION MODULATION /PDM/ NOVEL CIRCUIT COMBINES PULSE STRETCHER WITH NOR GATE GSFC-187	864-10150	01-01
FLUID-PRESSURE METER CAN BE CALIBRATED WITHOUT REMOVAL FROM FLOW LINE M-FS-98	863-10502	01-05	PULSE MODULATION EFFICIENT CIRCUIT TRIGGERS HIGH-CURRENT, HIGH- VOLTAGE PULSES MSC-14	864-10024	01-01
PRESSURE TRANSDUCER 3/8-INCH IN SIZE CAN BE FAIRED INTO SURFACE WOO-065	864-10021	01-05	PULSE TRANSMISSION SYSTEM TINY SENSOR-TRANSMITTER CAN WITHSTAND EXTREME ACCELERATION, GIVES DIGITAL OUTPUT ARC-22	863-10561	01-01
MULTIPLE PORT PRESSURE SCANNER VALVE FEATURES GREATER ACCURACY, QUICKER DATA JPL-555	864-10031	01-05	PUMP LEVEL OF SUPER-COLD LIQUIDS AUTOMATICALLY MAINTAINED BY LEVELOMETER JPL-397	863-10250	01-01
PRESSURE VESSEL METHOD OF WELDING JOINT IN CLOSED VESSEL IMPROVES QUALITY OF SEAM JPL-170	863-10139	01-05	FINE-PARTICLE FILTER PREVENTS DAMAGE TO VACUUM PUMPS LEWIS-106	863-10489	01-05
PRESSURIZATION LOW-COST INSULATION SYSTEM FOR CRYOSTATS ELIMINATES NEED FOR A VACUUM LEWIS-64	863-10365	01-03	PURIFICATION CRYOGENIC FILTER METHOD PRODUCES SUPER-PURE HELIUM AND HELIUM ISOTOPES JPL-374	863-10235	01-03
PRINTED CIRCUIT MODULAR CHASSIS SIMPLIFIES PACKAGING AND INTERCONNECTING OF CIRCUIT BOARDS JPL-236A	863-10174	01-01	R		
FRONT AND BACK PRINTED CIRCUIT LAYOUTS PRESENTED ON SINGLE SHEET GSFC-93	863-10596	01-01	RADIANT HEATING RADIANT HEATER FOR VACUUM FURNACES OFFERS HIGH STRUCTURAL RIGIDITY, LOW HEAT LOSS LEWIS-39	863-10342	01-01
COMPACT COAXIAL CONNECTOR FOR PRINTED CIRCUIT ADDS RELIABILITY MSC-57	864-10016	01-01	RADIATION ABSORPTION FLANGE ON MICROWAVE ANTENNA SUBREFLECTOR CUTS GROUND NOISE JPL-362	863-10229	01-01
USE OF PHOTOGRAPHS SPEEDS INSPECTION OF PRINTED-CIRCUIT BOARDS MSC-72	864-10118	01-01	RADIATION DETECTOR RADIATION DETECTOR-OPTICAL HANGING DEVICE IS OF SIMPLIFIED CONSTRUCTION GSFC-251	864-10299	01-01
PRISM LIQUID-LEVEL METER HAS NO MOVING PARTS M-FS-3	863-10378	01-03	RADIATION DISTRIBUTION NOVEL HORN ANTENNA REDUCES SIDE LOBES, IMPROVES RADIATION PATTERN JPL-425	863-10264	01-01
PROBE COOLING METHOD PROLONGS LIFE OF HOT-WIRE TRANSDUCER LEWIS-41	863-10344	01-02	RADIO COMMUNICATION COMFORTABLE, LIGHTWEIGHT SAFETY HELMET HOLDS RADIO TRANSMITTER, RECEIVER MSC-53	864-10015	01-05
PROJECTION USE OF PHOTOGRAPHS SPEEDS INSPECTION OF PRINTED-CIRCUIT BOARDS MSC-72	864-10118	01-01	RADIO FREQUENCY MODIFIED RF COAXIAL CONNECTOR ENDS VACUUM CHAMBER WIRING PROBLEM GSFC-150	864-10010	01-01
PROPAGATION MODE NOVEL HORN ANTENNA REDUCES SIDE LOBES, IMPROVES RADIATION PATTERN JPL-425	863-10264	01-01	RADIO RECEIVER COMFORTABLE, LIGHTWEIGHT SAFETY HELMET HOLDS RADIO TRANSMITTER, RECEIVER MSC-53	864-10015	01-05
PROTECTIVE COATING SOLDER FLUX LEAVES CORROSION-RESISTANT COATING ON METAL JPL-611	864-10206	01-03	RADIO TRANSMITTER COMFORTABLE, LIGHTWEIGHT SAFETY HELMET HOLDS RADIO TRANSMITTER, RECEIVER MSC-53	864-10015	01-05
PROTRACTOR SETTING OF ANGLES ON MACHINE TOOLS SPEEDED BY MAGNETIC PROTRACTOR ARC-5	863-10006	01-01	RAFT NEW INFLATABLE LIFERAFT IS NONTIPPABLE MSC-4A	864-10001	01-05
PULLEY CHAIN FRICTION SYSTEM GIVES POSITIVE, REVERS- IBLE DRIVE ARC-8	863-10009	01-05	READOUT OPTICS USED TO MEASURE TORQUE AT HIGH ROTATIONAL SPEEDS LEWIS-13	863-10338	01-01
APPARATUS ALTERS POSITION OF OBJECTS TO FACILITATE DEMAGNETIZATION			LOW-COST TAPE SYSTEM MEASURES VELOCITY OF ACCELERATION		

SUBJECT INDEX

RESISTOR

GSFC-85	B63-10512	01-01	W00-4	B63-10420	01-05
COMPACT CARTRIDGE DRIVES CODED TAPE AT CONSTANT READOUT SPEED JPL-472	B64-10222	01-01	INSTRUMENT ADJUSTMENT KNOB LOCKS TO PREVENT ACCIDENTAL MALADJUSTMENT M-FS-190	B64-10249	01-05
RECORDING INSTRUMENT			RELIABILITY		
SMALL DIGITAL RECORDING HEAD HAS PARALLEL BIT CHANNELS, MINIMIZES CROSS TALK JPL-0029	B63-10284	01-01	INCREASED PERFORMANCE RELIABILITY OBTAINED WITH DUAL /REDUNDANT/ OSCILLATOR SYSTEM GSFC-36	B63-10027	01-01
IMPROVED ELECTRODE GIVES HIGH-QUALITY BIOLOGICAL RECORDINGS MSC-17	B64-10025	01-04	CIRCUIT RELIABILITY BOOSTED BY SOLDERING PINS OF DISCONNECT PLUGS TO SOCKETS JPL-447	B64-10002	01-01
RECTIFIER			COMPACT COAXIAL CONNECTOR FOR PRINTED CIRCUIT ADDS RELIABILITY MSC-57	B64-10016	01-01
EMISSION TESTER FOR HIGH-POWER VACUUM TUBES JPL-628	B64-10158	01-01	RELIABILITY CONTROL		
REFERENCE SYSTEM			INCREASED PERFORMANCE RELIABILITY OBTAINED WITH DUAL /REDUNDANT/ OSCILLATOR SYSTEM GSFC-36	B63-10027	01-01
REFERENCE BLACK BODY IS COMPACT, CONVENIENT TO USE ARC-3	B63-10004	01-03	COMPOSITE, VACUUM-JACKETED TUBING REPLACES BELLWS IN CRYOGENIC SYSTEMS LEWIS-67	B63-10368	01-05
REFLECTION			RELIEF VALVE		
ATTACHMENT CONVERTS MICROSCOPE TO POINT SOURCE AUTOCOLLIMATOR JPL-499	B64-10124	01-05	SENSITIVE LOW-PRESSURE RELIEF VALVE HAS POSITIVE SEATING AGAINST LEAKAGE W00-041	B64-10278	01-05
REFLECTOR			REMOTE CONTROL		
FLANGE ON MICROWAVE ANTENNA SUBREFLECTOR CUTS GROUND NOISE JPL-362	B63-10229	01-01	SOLENOID PERMITS REMOTE CONTROL OF STOP WATCH AND ASSURES RESTARTING FRC-17	B63-10024	01-01
TEST DEVICE PREVENTS MOLECULAR BOUNCE-BACK GSFC-82	B63-10546	01-03	LIQUID SWITCH IS REMOTELY OPERATED BY LOW DC VOLTAGE GSFC-119	B63-10599	01-01
ELLIPSOIDAL OPTICAL REFLECTORS REPRODUCED BY ELECTROFORMING GSFC-92	B63-10547	01-05	REPRODUCTION		
PLASTIC FILMS FOR REFLECTIVE SURFACES REPRODUCED FROM MASTERS GSFC-188	B64-10151	01-03	FRONT AND BACK PRINTED CIRCUIT LAYOUTS PRESENTED ON SINGLE SHEET GSFC-93	B63-10596	01-01
REFRACTORY ALLOY			PLASTIC FILMS FOR REFLECTIVE SURFACES REPRODUCED FROM MASTERS GSFC-188	B64-10151	01-03
NEW COBALT ALLOYS HAVE HIGH-TEMPERATURE STRENGTH AND LONG LIFE IN VACUUM ENVIRONMENTS LEWIS-47	B63-10351	01-03	RESIN		
REFRACTORY MATERIAL			QUICK-HARDENING PROBLEMS ARE ELIMINATED WITH SPRAY GUN MODIFICATION WHICH MIXES RESIN AND ACCELERATOR LIQUIDS DURING APPLICATION LANGLEY-6A	B63-10318	01-03
APPARATUS FACILITATES HIGH-TEMPERATURE TENSILE TESTING IN VACUUM LEWIS-42	B63-10345	01-03	PLASTIC MOLDS REDUCE COST OF ENCAPSULATING ELECTRIC CABLE CONNECTORS M-FS-69	B63-10568	01-05
REFRACTORY CERAMIC HAS WIDE USAGE, LOW FABRICATION COST M-FS-67	B63-10481	01-03	SERVO SYSTEM FACILITATES PHOTOELASTIC STRAIN MEASUREMENTS ON RESINS JPL-504	B64-10280	01-01
REFRACTORY THERMAL INSULATION FOR SMOOTH METAL SURFACES M-FS-160	B64-10099	01-03	RESISTANCE		
REFRACTORY METAL			REFRACTORY CERAMIC HAS WIDE USAGE, LOW FABRICATION COST M-FS-67	B63-10481	01-03
RADIANT HEATER FOR VACUUM FURNACES OFFERS HIGH STRUCTURAL RIGIDITY, LOW HEAT LOSS LEWIS-39	B63-10342	01-01	RESISTANCE HEATING		
RAPID BILLET LOADER AIDS EXTRUSION OF REFRAC- TORY METALS LEWIS-50	B63-10354	01-05	REMOVABLE PREHEATER ELEMENTS IMPROVE OXIDE INDUCTION FURNACE JPL-288	B63-10193	01-01
REGULATOR			APPARATUS FACILITATES HIGH-TEMPERATURE TENSILE TESTING IN VACUUM LEWIS-42	B63-10345	01-03
ELASTIC ORIFICE AUTOMATICALLY REGULATES GAS BEARINGS JPL-135	B63-10123	01-05	RESISTOR		
HIGH-PRESSURE REGULATING SYSTEM PREVENTS PRESSURE SURGES JPL-231	B63-10170	01-05	HIGHLY EFFICIENT SQUARE-WAVE OSCILLATOR OPER- ATOR AT HIGH POWER LEVELS GSFC-112	B63-10554	01-01
RELAY			TEMPERATURE-SENSITIVE NETWORK DRIVES ASTABLE MULTIVIBRATOR GSFC-137	B63-10609	01-01
CIRCUIT SWITCHES LATCHING RELAY IN RESPONSE TO SIGNALS OF DIFFERENT POLARITY W00-055	B63-10508	01-01	EFFICIENT CIRCUIT TRIGGERS HIGH-CURRENT, HIGH-		
RELEASE DEVICE					
SIMPLE MECHANISM COMBINES POSITIVE LOCKING AND QUICK-RELEASE FEATURES					

RESONANT FREQUENCY

SUBJECT INDEX

VOLTAGE PULSES
MSC-14 864-10024 01-01

FIELD EFFECT TRANSISTORS USED AS VOLTAGE-
CONTROLLED RESISTORS
M-FS-174 864-10163 01-01

RESONANT FREQUENCY
WELDED PRESSURE TRANSDUCER MADE AS SMALL AS
1/8TH-INCH IN DIAMETER
ARC-11 863-10429 01-03

RESPIRATION
DEVICE INDUCES LUNGS TO MAINTAIN KNOWN
CONSTANT PRESSURE
MSC-50 864-10108 01-04

RESPIRATORY RATE
PNEUMOTACHOMETER COUNTS RESPIRATION RATE OF
HUMAN SUBJECT
MSC-92 864-10259 01-01

RESTRAINT
A TECHNIQUE FOR MAKING ANIMAL RESTRAINTS
ARC-25 863-10564 01-05

SAFETY RESTRAINER PREVENTS WHIPPING OF
RUPTURED HIGH-PRESSURE HOSE
LEWIS-99 864-10348 01-05

RETAINER
NEW PACKAGE FOR BELLEVILLE SPRING PERMITS RATE
CHANGE, EASY DISASSEMBLY
JPL-392 863-10247 01-05

SIMPLE MECHANISM COMBINES POSITIVE LOCKING AND
QUICK-RELEASE FEATURES
WOO-4 863-10420 01-05

REVERSER
NOVEL CLAMPS ALIGN LARGE ROCKET CASES,
ELIMINATE BACK-UP BARS
M-FS-1 863-10376 01-05

RING
HOT-AIR SOLDERING TECHNIQUE PREVENTS OVERHEAT-
ING OF ELECTRICAL COMPONENTS
GSFC-91 863-10536 01-01

RING COUNTER MAY BE ADVANCED OR RETARDED BY
COMMAND SIGNAL
GSFC-101 864-10144 01-01

ROCKET
NOVEL CLAMPS ALIGN LARGE ROCKET CASES,
ELIMINATE BACK-UP BARS
M-FS-1 863-10376 01-05

ROCKET CHAMBER
NEW METHOD USED TO FABRICATE LIGHT-WEIGHT HEAT
EXCHANGER FOR ROCKET MOTOR
LEWIS-43 863-10346 01-02

ROCKET MOTOR CASE
NEW METHOD USED TO FABRICATE LIGHT-WEIGHT HEAT
EXCHANGER FOR ROCKET MOTOR
LEWIS-43 863-10346 01-02

NOVEL CLAMPS ALIGN LARGE ROCKET CASES,
ELIMINATE BACK-UP BARS
M-FS-1 863-10376 01-05

ROD
COOLING METHOD PROLONGS LIFE OF HOT-WIRE
TRANSDUCER
LEWIS-41 863-10344 01-02

THREADING HOOK FACILITATES SAFE RECOVERY OF
HEAVY LOADS
MSC-46 864-10185 01-05

ROLLER BEARING
APPARATUS OF SMALL SIZE CAN BE EXTENDED INTO
LONG, RIGID BOOM
JPL-305 863-10200 01-05

ROLLING
APPARATUS OF SMALL SIZE CAN BE EXTENDED INTO
LONG, RIGID BOOM

JPL-305 863-10200 01-05

ROTARY DRIVE
DEVICE TRANSMITS ROTARY MOTION THROUGH HERMET-
ICALLY SEALED WALL
JPL-303 863-10198 01-05

FINE-PARTICLE FILTER PREVENTS DAMAGE TO VACUUM
PUMPS
LEWIS-106 863-10489 01-05

ROTATING SHAFT
APPARATUS ALTERS POSITION OF OBJECTS TO
FACILITATE DEMAGNETIZATION
GSFC-234 864-10277 01-05

ROTATION
BEARING TRANSMITS ROTARY AND AXIAL MOTION
LANGLEY-27 864-10130 01-05

RUBBER
FRICTIONAL WEDGE SHOCK MOUNT IS INEXPENSIVE,
HAS GOOD DAMPING CHARACTERISTICS
JPL-IT-1001 863-10289 01-05

RUPTURE
SAFETY RESTRAINER PREVENTS WHIPPING OF
RUPTURED HIGH-PRESSURE HOSE
LEWIS-99 864-10348 01-05

S

SAFETY DEVICE
SELF-BALANCING BEAM PERMITS SAFE, EASY LOAD
HANDLING UNDER OVERHANG
M-FS-84 863-10571 01-05

COMFORTABLE, LIGHTWEIGHT SAFETY HELMET HOLDS
RADIO TRANSMITTER, RECEIVER
MSC-53 864-10015 01-05

SAFETY RESTRAINER PREVENTS WHIPPING OF
RUPTURED HIGH-PRESSURE HOSE
LEWIS-99 864-10348 01-05

SCALE MODEL
BUILT-IN TEMPLATES SPEED UP PROCESS FOR MAKING
ACCURATE MODELS
LANGLEY-23 863-10526 01-05

SCANNING DEVICE
MULTIPLE PORT PRESSURE SCANNER VALVE FEATURES
GREATER ACCURACY, QUICKER DATA
JPL-555 864-10031 01-05

SCINTILLATION COUNTER
CESIUM IODIDE CRYSTALS FUSED TO VACUUM TUBE
FACEPLATES
GSFC-67 863-10476 01-03

SCREEN
FINE-MESH SCREEN MADE BY SIMPLIFIED METHOD
WOO-104 864-10282 01-03

SEALANT
PACKLESS VALVE WITH ALL-METAL SEAL HANDLES
WIDE TEMPERATURE, PRESSURE RANGE
JPL-361 863-10228 01-05

ELASTOMERS BONDED TO METAL SURFACES SEAL
ELECTROCHEMICAL CELLS
GSFC-168 864-10113 01-03

SEALING
VENTED PISTON SEAL PREVENTS FLUID LEAKAGE
BETWEEN TWO CHAMBERS
JPL-179 863-10141 01-05

DEVICE TRANSMITS ROTARY MOTION THROUGH HERMET-
ICALLY SEALED WALL
JPL-303 863-10198 01-05

PACKLESS VALVE WITH ALL-METAL SEAL HANDLES
WIDE TEMPERATURE, PRESSURE RANGE
JPL-361 863-10228 01-05

DESIGN OF VALVE PERMITS SEALING EVEN IF THE
STEM IS MISALIGNED
LEWIS-38 863-10341 01-05

SUBJECT INDEX

SILICON

VACUUM-TYPE BACKUP BAR SPEEDS WELD REPAIRS M-FS-12	B63-10384	01-05	IN LOW-COST INVESTMENT CASTING PATTERNS ARC-7	B63-10008	01-05
TOOL FACILITATES SEALING OF METAL FILL TUBES MSC-24	B63-10519	01-05	MACHINE TESTS CREASE DURABILITY OF SHEET MATERIALS JPL-604	B64-10178	01-05
CONNECTOR SEALS FLUID LINES AT CRYOGENIC TEMPERATURES AND HIGH VACUUMS GSFC-253	B64-10327	01-05	SHEET METAL APPARATUS OF SMALL SIZE CAN BE EXTENDED INTO LONG, RIGID BOOM JPL-305	B63-10200	01-05
SEISMOMETER UNMANNED SEISMOMETER LEVELS SELF, CORRECTS DRIFT ERRORS GSFC-100	B63-10551	01-01	BUILT-IN TEMPLATES SPEED UP PROCESS FOR MAKING ACCURATE MODELS LANGLEY-23	B63-10526	01-05
SELF-SEALING SELF SEALING DISCONNECT FOR TUBING FORMS METAL SEAL AFTER BREAKAWAY JPL-354	B63-10226	01-05	SHELL A TECHNIQUE FOR MAKING ANIMAL RESTRAINTS ARC-25	B63-10564	01-05
SEMICONDUCTOR RADIATION DETECTOR-OPTICAL HANGING DEVICE IS OF SIMPLIFIED CONSTRUCTION GSFC-251	B64-10299	01-01	SHIELDING SMALL FOAMED POLYSTYRENE SHIELD PROTECTS LOW- FREQUENCY MICROPHONES FROM WIND NOISE M-FS-123	B63-10579	01-01
SENSITIVITY ULTRA-SENSITIVE TRANSDUCER ADVANCES MICRO- MEASUREMENT RANGE ARC-26	B64-10004	01-01	SHIFT REGISTER RING COUNTER MAY BE ADVANCED OR RETARDED BY COMMAND SIGNAL GSFC-101	B64-10144	01-01
SENSOR SOLAR-ANGLE SENSOR HAS NO MOVING PARTS JPL-418	B63-10260	01-02	SHOCK FRICTIONAL WEDGE SHOCK MOUNT IS INEXPENSIVE, HAS GOOD DAMPING CHARACTERISTICS JPL-IT-1001	B63-10289	01-05
IMPROVED SENSOR COUNTS MICROMETEOROID PENETRATIONS LEWIS-76	B63-10443	01-01	SHOCK ABSORBER THERMALLY CONDUCTIVE METAL WOOL-SILICONE RUBBER MATERIAL CAN BE USED AS SHOCK AND VIBRATION DAMPER JPL-321	B63-10207	01-03
TINY SENSOR-TRANSMITTER CAN WITHSTAND EXTREME ACCELERATION, GIVES DIGITAL OUTPUT ARC-22	B63-10561	01-01	FRICTIONAL WEDGE SHOCK MOUNT IS INEXPENSIVE, HAS GOOD DAMPING CHARACTERISTICS JPL-IT-1001	B63-10289	01-05
SIMPLE CIRCUIT CONTINUOUSLY MONITORS THERMOCOUPLE SENSOR M-FS-61	B63-10567	01-01	BREAK-UP OF METAL TUBE MAKES ONE-TIME SHOCK ABSORBER, BARS REBOUND LANGLEY-1A	B63-10304	01-05
SPEED-SENSING DEVICE AIDS CRANE OPERATORS WS-4	B64-10006	01-05	NOVEL SHOCK ABSORBER FEATURES VARYING YIELD STRENGTHS MSC-63A	B64-10138	01-03
OHMMETER SENSES DEPLETION OF LUBRICANT IN JOURNAL BEARINGS LEWIS-37	B64-10042	01-01	SIDELobe REDUCTION NOVEL HORN ANTENNA REDUCES SIDE LOBES, IMPROVES RADIATION PATTERN JPL-425	B63-10264	01-01
APPARATUS MEASURES VERY SMALL THRUSTS WOO-048	B64-10284	01-05	SIGHT LINE MIRROR DEVICE ALIGNS MACHINE SURFACE PERPEN- DICULAR TO SIGHT LINES WOO-5	B63-10421	01-02
SEPARATION SELF SEALING DISCONNECT FOR TUBING FORMS METAL SEAL AFTER BREAKAWAY JPL-354	B63-10226	01-05	SIGNAL MODIFIED FILTER PREVENTS CONDUCTION OF MICRO- WAVE SIGNALS ALONG HIGH-VOLTAGE POWER SUPPLY LEADS JPL-63	B63-10091	01-01
SEQUENTIAL CONTROL RING COUNTER MAY BE ADVANCED OR RETARDED BY COMMAND SIGNAL GSFC-101	B64-10144	01-01	CIRCUIT SWITCHES LATCHING RELAY IN RESPONSE TO SIGNALS OF DIFFERENT POLARITY WOO-055	B63-10508	01-01
SERVOAMPLIFIER APPARATUS MEASURES VERY SMALL THRUSTS WOO-048	B64-10284	01-05	COMPUTER DETERMINES HIGH-FREQUENCY PHASE STABILITY GSFC-113	B63-10555	01-01
SERVOMECHANISM OPTICS USED TO MEASURE TORQUE AT HIGH ROTATIONAL SPEEDS LEWIS-13	B63-10338	01-01	RING COUNTER MAY BE ADVANCED OR RETARDED BY COMMAND SIGNAL GSFC-101	B64-10144	01-01
SERVO SYSTEM FACILITATES PHOTOELASTIC STRAIN MEASUREMENTS ON RESINS JPL-504	B64-10280	01-01	SIGNAL TRANSMISSION MODIFIED FILTER PREVENTS CONDUCTION OF MICRO- WAVE SIGNALS ALONG HIGH-VOLTAGE POWER SUPPLY LEADS JPL-63	B63-10091	01-01
SHAFT DEVICE TRANSMITS ROTARY MOTION THROUGH HERMET- ICALLY SEALED WALL JPL-303	B63-10198	01-05	SILICON COMPUTER CIRCUIT WILL FIT ON SINGLE SILICON		
BEARING TRANSMITS ROTARY AND AXIAL MOTION LANGLEY-27	B64-10130	01-05			
SHEET VACUUM FORMING OF THERMOPLASTIC SHEET RESULTS					

SILICON COMPOUND

SUBJECT INDEX

CHIP JPL-513	B63-10514	01-01	JPL-384	B63-10240	01-05
SILICON COMPOUND REFRACTORY CERAMIC HAS WIDE USAGE, LOW FABRICATION COST M-FS-67	B63-10481	01-03	SLOT V-SLOTTED SCREW HEAD AND MATCHING DRIVING TOOL FACILITATE INSERTION AND REMOVAL OF SCREW FASTENERS FRC-16	B63-10023	01-05
SILICON CONTROL RECTIFIER /SCR/ CIRCUIT CONTROLS TRANSIENTS IN SCR INVERTERS GSFC-120	B63-10600	01-01	SOLAR CELL NEW METHOD USED TO FABRICATE GALLIUM ARSENIDE PHOTOVOLTAIC DEVICE WOO-062	B64-10019	01-01
SILICON OXIDE REFRACTORY CERAMIC HAS WIDE USAGE, LOW FABRICATION COST M-FS-67	B63-10481	01-03	SOLAR SENSOR SOLAR-ANGLE SENSOR HAS NO MOVING PARTS JPL-418	B63-10260	01-02
LEAD OXIDE CERAMIC MAKES EXCELLENT HIGH- TEMPERATURE LUBRICANT LEWIS-144	B64-10116	01-03	SOLDER CESIUM IODIDE CRYSTALS FUSED TO VACUUM TUBE FACEPLATES GSFC-67	B63-10476	01-03
SILICONE RUBBER THERMALLY CONDUCTIVE METAL WOOL-SILICONE RUBBER MATERIAL CAN BE USED AS SHOCK AND VIBRATION DAMPER JPL-321	B63-10207	01-03	HOT-AIR SOLDERING TECHNIQUE PREVENTS OVERHEAT- ING OF ELECTRICAL COMPONENTS GSFC-91	B63-10536	01-01
PRESSURE MOLDING OF POWDERED MATERIALS IMPROVED BY RUBBER MOLD INSERT WOO-100	B64-10270	01-03	SOLDERED JOINT CIRCUIT RELIABILITY BOOSTED BY SOLDERING PINS OF DISCONNECT PLUGS TO SOCKETS JPL-447	B64-10002	01-01
SILVER IMPROVED MOLYBDENUM DISULFIDE-SILVER MOTOR BRUSHES HAVE EXTENDED LIFE M-FS-64	B63-10479	01-03	SOLDERING HOT-AIR SOLDERING TECHNIQUE PREVENTS OVERHEAT- ING OF ELECTRICAL COMPONENTS GSFC-91	B63-10536	01-01
CONNECTOR FOR THERMOCOUPLE LEADS SAVES COSTLY WIRE, MAKES RELIABLE CONNECTORS LANGLEY-26	B63-10529	01-01	COMPACT COAXIAL CONNECTOR FOR PRINTED CIRCUIT ADDS RELIABILITY MSC-57	B64-10016	01-01
IMPROVED ELECTRODE GIVES HIGH-QUALITY BIOLOGICAL RECORDINGS MSC-17	B64-10025	01-04	SOLDER FLUX LEAVES CORROSION-RESISTANT COATING ON METAL JPL-611	B64-10206	01-03
SILVER CHLORIDE CESIUM IODIDE CRYSTALS FUSED TO VACUUM TUBE FACEPLATES GSFC-67	B63-10476	01-03	SOLENOID SOLENOID PERMITS REMOTE CONTROL OF STOP WATCH AND ASSURES RESTARTING FRC-17	B63-10024	01-01
SILVER-ZINC BATTERY AUXILIARY SILVER ELECTRODE ELIMINATES TWO-STEP VOLTAGE DISCHARGE CHARACTERISTIC OF SILVER- ZINC CELLS GSFC-169	B64-10114	01-01	ELECTROMECHANICALLY OPERATED CAMERA SHUTTER PROVIDES UNIFORM EXPOSURE JPL-357	B63-10227	01-01
SIMULATOR ELECTRONIC DEVICE SIMULATES RESPIRATION RATE AND DEPTH MSC-89	B64-10255	01-01	CAMERA SHUTTER IS ACTUATED BY ELECTRIC SIGNAL ARC-20	B63-10560	01-05
SIMULATOR TRAINING TECHNIQUE SIMULATES EFFECT OF REDUCED GRAVITY LANGLEY-44	B64-10146	01-04	SOLID LUBRICANT LEAD OXIDE CERAMIC MAKES EXCELLENT HIGH- TEMPERATURE LUBRICANT LEWIS-144	B64-10116	01-03
SINTERING IMPROVED MOLYBDENUM DISULFIDE-SILVER MOTOR BRUSHES HAVE EXTENDED LIFE M-FS-64	B63-10479	01-03	SOLID STATE DEVICE DIGITAL CARDIOMETER COMPUTES AND DISPLAYS HEARTBEAT RATE MSC-93	B64-10258	01-01
NEW SINTERING PROCESS ADJUSTS MAGNETIC VALUE OF FERRITE CORES GSFC-129	B63-10606	01-01	SOLVENT METHOD OF WELDING JOINT IN CLOSED VESSEL IMPROVES QUALITY OF SEAM JPL-170	B63-10139	01-05
SKIN FLEXIBLE FASTENER ALLOWS THERMAL EXPANSION LANGLEY-40	B64-10145	01-05	SPACECRAFT HIGH PURITY ELECTROFORMING YIELDS SUPERIOR METAL MODELS ARC-6	B63-10007	01-05
SKIN /BIOL/ IMPROVED ELECTRODE GIVES HIGH-QUALITY BIOLOGICAL RECORDINGS MSC-17	B64-10025	01-04	KINETIC-ENERGY ABSORBER EMPLOYS FRICTIONAL FORCE BETWEEN MATING CYLINDERS LEWIS-75	B63-10442	01-05
SLEEVE SELF SEALING DISCONNECT FOR TUBING FORMS METAL SEAL AFTER BREAKAWAY JPL-354	B63-10226	01-05	ULTRA-SENSITIVE TRANSDUCER ADVANCES MICRO- MEASUREMENT RANGE ARC-26	B64-10004	01-01
SLEEVE AND CUTTER SIMPLIFY DISCONNECTING WELDED JOINT IN TUBING			SPACECRAFT COMPONENT APPARATUS ALTERS POSITION OF OBJECTS TO FACILITATE DEMAGNETIZATION GSFC-234	B64-10277	01-05

SUBJECT INDEX

SUPERCooling

SPACECRAFT SENSOR
IMPROVED SENSOR COUNTS MICROMETEOROID
PENETRATIONS
LEWIS-76 863-10443 01-01

SPHERE
REFERENCE BLACK BODY IS COMPACT, CONVENIENT TO
USE
ARC-3 863-10004 01-03

MODIFIED GAS BEARING IS ADJUSTABLE TO OPTIMUM
STIFFNESS RATIO
M-FS-145 864-10050 01-05

PNEUMATIC POWER IS TRANSMITTED THROUGH AIR
BEARING
MSC-8 864-10141 01-05

SPIN FORGING
STAINLESS-STEEL ELBOWS FORMED BY SPIN FORGING
M-FS-122 863-10590 01-05

SPOT WELDING
WELDED PRESSURE TRANSDUCER MADE AS SMALL AS
1/8TH-INCH IN DIAMETER
ARC-11 863-10429 01-03

WELDING PROCEDURE IMPROVES QUALITY OF WELDS,
OFFERS OTHER ADVANTAGES
M-FS-32 864-10309 01-01

SPRAY
QUICK-HARDENING PROBLEMS ARE ELIMINATED WITH
SPRAY GUN MODIFICATION WHICH MIXES RESIN AND
ACCELERATOR LIQUIDS DURING APPLICATION
LANGLEY-6A 863-10318 01-03

SPRING
SOLENOID PERMITS REMOTE CONTROL OF STOP WATCH
AND ASSURES RESTARTING
FRC-17 863-10024 01-01

NEW PACKAGE FOR BELLEVILLE SPRING PERMITS RATE
CHANGE, EASY DISASSEMBLY
JPL-392 863-10247 01-05

APPARATUS MEASURES VERY SMALL THRUSTS
WOO-048 864-10284 01-05

STABILITY
COMPUTER DETERMINES HIGH-FREQUENCY PHASE
STABILITY
GSFC-113 863-10555 01-01

MONOSTABLE CIRCUIT WITH TUNNEL DIODE HAS FAST
RECOVERY
GSFC-132 863-10603 01-01

STABILIZER
NEW INFLATABLE LIFERAFT IS NONTIPPABLE
MSC-4A 864-10001 01-05

STAINLESS STEEL
APPARATUS FACILITATES HIGH-TEMPERATURE TENSILE
TESTING IN VACUUM
LEWIS-42 863-10345 01-03

ELLIPSOIDAL OPTICAL REFLECTORS REPRODUCED BY
ELECTROFORMING
GSFC-92 863-10547 01-05

STAINLESS-STEEL ELBOWS FORMED BY SPIN FORGING
M-FS-122 863-10590 01-05

STARTING
CIRCUIT CONTROLS TRANSIENTS IN SCR INVERTERS
GSFC-120 863-10600 01-01

STEADY STATE
IMPROVED VARIABLE-RELUCTANCE TRANSDUCER MEAS-
URES TRANSIENT PRESSURES
LANGLEY-10 863-10321 01-01

STEEL
LIGHTWEIGHT UNIVERSAL JOINT TRANSMITS BOTH
TORQUE AND THRUST
JPL-375 863-10236 01-05

STEP FUNCTION
STEPPING SWITCH WITH SIMPLE ACTUATOR PROVIDES
MANY CONTACTS IN SMALL SPACE
JPL-122 863-10118 01-01

STIMULUS
SUBMINIATURE BIOTELEMETRY UNIT PERMITS REMOTE
PHYSIOLOGICAL INVESTIGATIONS
ARC-39 864-10171 01-01

STOPWATCH CONTROL
SOLENOID PERMITS REMOTE CONTROL OF STOP WATCH
AND ASSURES RESTARTING
FRC-17 863-10024 01-01

STORAGE
STEPPING SWITCH WITH SIMPLE ACTUATOR PROVIDES
MANY CONTACTS IN SMALL SPACE
JPL-122 863-10118 01-01

METAL STRIP FORMS 21 FOOT BOOM, ROLLS UP FOR
COMPACT STORAGE
GSFC-151 864-10011 01-05

STORAGE DEVICE
METAL STRIP FORMS 21 FOOT BOOM, ROLLS UP FOR
COMPACT STORAGE
GSFC-151 864-10011 01-05

STORAGE TANK
HELICAL TUBE SEPARATES NITROGEN GAS FROM
LIQUID NITROGEN
JPL-398 863-10251 01-05

STORAGE UNIT
COMPACT CARTRIDGE DRIVES CODED TAPE AT
CONSTANT READOUT SPEED
JPL-472 864-10222 01-01

STRAIN GAUGE
RAPID HELIUM-AIR ANALYZER CAN MEASURE OTHER
BINARY GAS MIXTURES
LANGLEY-16 863-10557 01-03

STRESS
RADIANT HEATER FOR VACUUM FURNACES OFFERS HIGH
STRUCTURAL RIGIDITY, LOW HEAT LOSS
LEWIS-39 863-10342 01-01

STRINGENT CLEANING TECHNIQUE ASSURES RELIABLE
EPOXY BOND
GSFC-161 864-10142 01-03

STRESSED-SKIN CONSTRUCTION
FLEXIBLE FASTENER ALLOWS THERMAL EXPANSION
LANGLEY-40 864-10145 01-05

STRIP
NEW METHOD USED TO FABRICATE LIGHT-WEIGHT HEAT
EXCHANGER FOR ROCKET MOTOR
LEWIS-43 863-10346 01-02

STRUCTURAL STABILITY
NEW METHOD USED TO FABRICATE LIGHT-WEIGHT HEAT
EXCHANGER FOR ROCKET MOTOR
LEWIS-43 863-10346 01-02

STRUCTURAL VIBRATION
VISCOS-PENDULUM DAMPER SUPPRESSES STRUCTURAL
VIBRATIONS
LANGLEY-45 864-10272 01-05

STRUCTURE
VARIABLE-TRANSPARENCY WALL REGULATES TEMPERA-
TURES OF STRUCTURES
LANGLEY-25 863-10528 01-03

SUPERCONDUCTOR
SUPERCOOLD TECHNIQUE DUPLICATES MAGNETIC FIELD
IN SECOND SUPERCONDUCTOR
JPL-376 863-10237 01-05

SHAPED SUPERCONDUCTOR CYLINDER RETAINS INTENSE
MAGNETIC FIELD
JPL-381 863-10238 01-01

SUPERCooling
SUPERCOOLD TECHNIQUE DUPLICATES MAGNETIC FIELD
IN SECOND SUPERCONDUCTOR

SUPERFLUIDITY

SUBJECT INDEX

JPL-376	B63-10237	01-05	LANGLEY-28	B63-10530	01-05
SUPERFLUIDITY			TANK		
CRYOGENIC FILTER METHOD PRODUCES SUPER-PURE HELIUM AND HELIUM ISOTOPES			TWO-PART VALVE ACTS AS QUICK COUPLING		
JPL-374	B63-10235	01-03	JPL-478	B64-10223	01-05
SUPPORT			TANTALUM		
MOUNTING FOR DIODES PROVIDES EFFICIENT HEAT SINK			APPARATUS FACILITATES HIGH-TEMPERATURE TENSILE TESTING IN VACUUM		
M-FS-197	B64-10283	01-01	LEWIS-42	B63-10345	01-03
SURFACE			TAPERED COLUMN		
PORTABLE FLOORING PROTECTS FINISHED SURFACES, IS EASILY MOVED			TOOL FACILITATES SEALING OF METAL FILL TUBES		
M-FS-15	B63-10387	01-05	MSC-24	B63-10519	01-05
KINETIC-ENERGY ABSORBER EMPLOYS FRICTIONAL FORCE BETWEEN MATING CYLINDERS			TELESCOPE		
LEWIS-75	B63-10442	01-05	ATTACHMENT CONVERTS MICROSCOPE TO POINT SOURCE AUTOCOLLIMATOR		
PRESSURE TRANSDUCER 3/8-INCH IN SIZE CAN BE FAIRED INTO SURFACE			JPL-499		
WOO-065	B64-10021	01-05		B64-10124	01-05
STRINGENT CLEANING TECHNIQUE ASSURES RELIABLE EPOXY BOND			TELEVISION CAMERA		
GSFC-161	B64-10142	01-03	RASTER LINEARITY OF VIDEO CAMERAS CALIBRATED WITH PRECISION TESTER		
CONNECTOR SEALS FLUID LINES AT CRYOGENIC TEMPERATURES AND HIGH VACUUMS			GSFC-200		
GSFC-253	B64-10327	01-05		B64-10209	01-01
SURFACE COATING			TEMPERATURE		
GATE VALVE WITH CERAMIC-COATED BASE OPERATES AT HIGH TEMPERATURES			TWO-STAGE EMITTER FOLLOWER IS TEMPERATURE STABILIZED		
ARC-23	B63-10562	01-03	MSC-20	B63-10493	01-01
SURFACE FINISH			TEMPERATURE COMPENSATION		
PORTABLE FLOORING PROTECTS FINISHED SURFACES, IS EASILY MOVED			NEW LOW-LEVEL A-C AMPLIFIER PROVIDES ADJUSTABLE NOISE CANCELLATION AND AUTOMATIC TEMPERATURE COMPENSATION		
M-FS-15	B63-10387	01-05	ARC-2	B63-10003	01-04
SURFACE VEHICLE			SIMPLE CIRCUIT PROVIDES ADJUSTABLE VOLTAGE WITH LINEAR TEMPERATURE VARIATION		
VEHICLE WALKS ON VARIED TERRAIN, CAN ASSIST HANDICAPPED PERSONS			JPL-WOO-029	B63-10537	01-01
WOO-005	B64-10274	01-05	TEMPERATURE CONTROL		
SURGE			VARIABLE-TRANSPARENCY WALL REGULATES TEMPERATURES OF STRUCTURES		
HIGH-PRESSURE REGULATING SYSTEM PREVENTS PRESSURE SURGES			LANGLEY-25	B63-10528	01-03
JPL-231	B63-10170	01-05	TEMPERATURE DIFFERENCE		
SURGICAL INSTRUMENT			TEMPERATURE-COMPENSATION CIRCUIT STABILIZES PERFORMANCE OF VIDICONS		
ENCAPSULATION PROCESS STERILIZES AND PRESERVES SURGICAL INSTRUMENTS			JPL-486	B64-10226	01-01
JPL-484	B64-10066	01-05	TEMPERATURE EFFECT		
SWITCH			HOT-AIR SOLDERING TECHNIQUE PREVENTS OVERHEATING OF ELECTRICAL COMPONENTS		
STEPPING SWITCH WITH SIMPLE ACTUATOR PROVIDES MANY CONTACTS IN SMALL SPACE			GSFC-91	B63-10536	01-01
JPL-122	B63-10118	01-01	TEMPERATURE GRADIENT		
COINCIDENT SWITCH CLOSING REDUCES ERROR IN MOTOR-DRIVEN TIMER			PACKLESS VALVE WITH ALL-METAL SEAL HANDLES WIDE TEMPERATURE, PRESSURE RANGE		
JPL-182	B63-10143	01-05	JPL-361	B63-10228	01-05
LIQUID SWITCH IS REMOTELY OPERATED BY LOW DC VOLTAGE			SIMPLE CIRCUIT PROVIDES ADJUSTABLE VOLTAGE WITH LINEAR TEMPERATURE VARIATION		
GSFC-119	B63-10599	01-01	JPL-WOO-029	B63-10537	01-01
DIGITAL LOGIC ELEMENTS PROVIDE ADDITIONAL FUNCTIONS FROM ANALOG INPUT			SIMPLE TRANSDUCER MEASURES LOW HEAT-TRANSFER RATES		
MSC-64	B64-10064	01-01	JPL-466	B64-10122	01-01
BANDWIDTH SWITCHING IS TRANSIENT-FREE, AVOIDS LOSS OF LOOP LOCK			TEMPLATE		
WOO-054	B64-10349	01-01	LATHE CONVERTED FOR GRINDING ASPHERIC SURFACES		
SWITCHING CIRCUIT			GSFC-115		
DOUBLE-THROW MICROWAVE DEVICE SWITCHES TWO LINES QUICKLY				B63-10556	01-05
JPL-410	B63-10258	01-01	TENSILE TESTING MACHINE		
TAKEOFF AND LANDING			APPARATUS FACILITATES HIGH-TEMPERATURE TENSILE TESTING IN VACUUM		
NEW ANEMOMETER HAS FAST RESPONSE, MEASURES DYNAMIC PRESSURE DIRECTLY			LEWIS-42	B63-10345	01-03
			TENSION		
			BUCKLE JOINS WEB STRAPS QUICKLY, ADJUSTS EASILY		
			LANGLEY-21		
				B64-10119	01-05
			TEST CHAMBER		
			TEST DEVICE PREVENTS MOLECULAR BOUNCE-BACK		
			GSFC-82		
				B63-10546	01-03
			TEST EQUIPMENT		
			TEST DEVICE PREVENTS MOLECULAR BOUNCE-BACK		
			GSFC-82		
				B63-10546	01-03

T

SUBJECT INDEX

TRANSDUCER

MACHINE TESTS CREASE DURABILITY OF SHEET MATERIALS JPL-604	B64-10178	01-05	THRESHOLD NEW SINTERING PROCESS ADJUSTS MAGNETIC VALUE OF FERRITE CORES GSFC-129	B63-10606	01-01
TEST METHOD CONTINUITY TESTER SCREENS OUT FAULTY SOCKET CONNECTIONS JPL-596	B64-10065	01-01	BLOCKING OSCILLATOR USES LOW TRIGGERING VOLTAGE MSC-58	B64-10017	01-01
IMPROVED INSERTION-LOSS TESTER JPL-358	B64-10080	01-01	THRUST LIGHTWEIGHT UNIVERSAL JOINT TRANSMITS BOTH TORQUE AND THRUST JPL-375	B63-10236	01-05
ELECTRONIC DEVICE SIMULATES RESPIRATION RATE AND DEPTH MSC-89	B64-10255	01-01	THRUST MEASUREMENT APPARATUS MEASURES VERY SMALL THRUSTS W00-048	B64-10284	01-05
THERMAL CONDUCTOR COOLING METHOD PROLONGS LIFE OF HOT-WIRE TRANSDUCER LEWIS-41	B63-10344	01-02	TIMING APPARATUS COINCIDENT SWITCH CLOSING REDUCES ERROR IN MOTOR-DRIVEN TIMER JPL-182	B63-10143	01-05
SIMPLE TRANSDUCER MEASURES LOW HEAT-TRANSFER RATES JPL-466	B64-10122	01-01	TOOL V-SLOTTED SCREW HEAD AND MATCHING DRIVING TOOL FACILITATE INSERTION AND REMOVAL OF SCREW FASTENERS FRC-16	B63-10023	01-05
THERMAL EXPANSION FLEXIBLE FASTENER ALLOWS THERMAL EXPANSION LANGLEY-40	B64-10145	01-05	SPECIAL PLIERS CONNECT HOSE CONTAINING LIQUID UNDER PRESSURE JPL-IT-1003	B63-10291	01-05
THERMAL INSULATION VARIABLE-TRANSPARENCY WALL REGULATES TEMPERATURES OF STRUCTURES LANGLEY-25	B63-10528	01-03	HEAVY-DUTY STAPLE REMOVER OPERATED BY HAND JPL-IT-1004	B63-10292	01-05
THERMAL PROPERTY INDIUM FOIL WITH BERYLLIA WASHER IMPROVES TRANSISTOR HEAT DISSIPATION GSFC-42	B63-10033	01-01	MINIATURE OXYGEN-HYDROGEN CUTTING TORCH CONSTRUCTED FROM HYPODERMIC NEEDLE JPL-545	B63-10517	01-05
THERMAL RADIATION VARIABLE-TRANSPARENCY WALL REGULATES TEMPERATURES OF STRUCTURES LANGLEY-25	B63-10528	01-03	TOOL FACILITATES SEALING OF METAL FILL TUBES MSC-24	B63-10519	01-05
THERMAL SHOCK REFRACTORY CERAMIC HAS WIDE USAGE, LOW FABRICATION COST M-FS-67	B63-10481	01-03	TOOLING INSULATED WELD TOOLING PERMITS UNIFORM, HIGH-QUALITY WELD MSC-42	B64-10058	01-05
THERMAL STRESS FLEXIBLE FASTENER ALLOWS THERMAL EXPANSION LANGLEY-40	B64-10145	01-05	TORCH MINIATURE OXYGEN-HYDROGEN CUTTING TORCH CONSTRUCTED FROM HYPODERMIC NEEDLE JPL-545	B63-10517	01-05
THERMISTOR TEMPERATURE-COMPENSATION CIRCUIT STABILIZES PERFORMANCE OF VIDICONS JPL-486	B64-10226	01-01	TORQUE DEVICE TRANSMITS ROTARY MOTION THROUGH HERMETICALLY SEALED WALL JPL-303	B63-10198	01-05
ELECTRONIC DEVICE SIMULATES RESPIRATION RATE AND DEPTH MSC-89	B64-10255	01-01	LIGHTWEIGHT UNIVERSAL JOINT TRANSMITS BOTH TORQUE AND THRUST JPL-375	B63-10236	01-05
PTC THERMISTOR PROTECTS MULTILOADED POWER SUPPLIES GSFC-236	B64-10281	01-01	TORQUE MEASURING APPARATUS OPTICS USED TO MEASURE TORQUE AT HIGH ROTATIONAL SPEEDS LEWIS-13	B63-10338	01-01
THERMOCOUPLE CONNECTOR FOR THERMOCOUPLE LEADS SAVES COSTLY WIRE, MAKES RELIABLE CONNECTORS LANGLEY-26	B63-10529	01-01	TRAILER COMPRESSED GAS SYSTEM OPERATES SEMITRAILER BRAKES DURING WINCHING OPERATION JPL-0036	B64-10306	01-05
SIMPLE CIRCUIT CONTINUOUSLY MONITORS THERMOCOUPLE SENSOR M-FS-61	B63-10567	01-01	TRANSDUCER IMPROVED VARIABLE-RELUCTANCE TRANSDUCER MEASURES TRANSIENT PRESSURES LANGLEY-10	B63-10321	01-01
THERMOMETRY APPARATUS MEASURES CONCENTRATION OF SUSPENDED DROPLETS IN GAS STREAMS LANGLEY-31	B64-10237	01-01	COOLING METHOD PROLONGS LIFE OF HOT-WIRE TRANSDUCER LEWIS-41	B63-10344	01-02
THERMOPLASTIC VACUUM FORMING OF THERMOPLASTIC SHEET RESULTS IN LOW-COST INVESTMENT CASTING PATTERNS ARC-7	B63-10008	01-05	DEVICE CALIBRATES VIBRATION TRANSDUCERS AT AMPLITUDES UP TO 20G. M-FS-86	B63-10572	01-01
THERMOPLASTIC FILM VACUUM FORMING OF THERMOPLASTIC SHEET RESULTS IN LOW-COST INVESTMENT CASTING PATTERNS ARC-7	B63-10008	01-05	ULTRA-SENSITIVE TRANSDUCER ADVANCES MICRO-MEASUREMENT RANGE ARC-26	B64-10004	01-01

TRANSFORMER

SUBJECT INDEX

SIMPLE TRANSDUCER MEASURES LOW HEAT-TRANSFER RATES JPL-466	B64-10122	01-01	GSFC-73	B64-10173	01-01
TRANSFORMER IMPROVED INSERTION-LOSS TESTER JPL-358	B64-10080	01-01	TRANSMITTER TINY SENSOR-TRANSMITTER CAN WITHSTAND EXTREME ACCELERATION, GIVES DIGITAL OUTPUT ARC-22	B63-10561	01-01
TRANSIENT LOAD CIRCUIT CONTROLS TRANSIENTS IN SCR INVERTERS GSFC-120	B63-10600	01-01	SUBMINIATURE BIOTELEMETRY UNIT PERMITS REMOTE PHYSIOLOGICAL INVESTIGATIONS ARC-39	B64-10171	01-01
TRANSIENT PRESSURE IMPROVED VARIABLE-RELUCTANCE TRANSDUCER MEASURES TRANSIENT PRESSURES LANGLEY-10	B63-10321	01-01	TRANSPARENCY VARIABLE-TRANSPARENCY WALL REGULATES TEMPERATURES OF STRUCTURES LANGLEY-25	B63-10528	01-03
TRANSISTOR INDIUM FOIL WITH BERYLLIA WASHER IMPROVES TRANSISTOR HEAT DISSIPATION GSFC-42	B63-10033	01-01	TUBE SELF SEALING DISCONNECT FOR TUBING FORMS METAL SEAL AFTER BREAKAWAY JPL-354	B63-10226	01-05
TWO-STAGE EMITTER FOLLOWER IS TEMPERATURE STABILIZED MSC-20	B63-10493	01-01	FILTER FOR HIGH-PRESSURE GASES HAS EASY TAKE-DOWN, ASSEMBLY JPL-373	B63-10234	01-03
TRANSISTORIZED TRIGGER CIRCUIT IS FREQUENCY-CONTROLLABLE GSFC-111	B63-10553	01-01	HELICAL TUBE SEPARATES NITROGEN GAS FROM LIQUID NITROGEN JPL-398	B63-10251	01-05
HIGHLY EFFICIENT SQUARE-WAVE OSCILLATOR OPERATOR AT HIGH POWER LEVELS GSFC-112	B63-10554	01-01	BREAK-UP OF METAL TUBE MAKES ONE-TIME SHOCK ABSORBER, BARS REBOUND LANGLEY-1A	B63-10304	01-05
LOW-POWER TRANSISTORIZED CIRCUIT PROVIDES STAIRCASE WAVEFORM GSFC-48	B64-10007	01-01	TOOL FACILITATES SEALING OF METAL FILL TUBES MSC-24	B63-10519	01-05
TEMPERATURE-COMPENSATION CIRCUIT STABILIZES PERFORMANCE OF VIDICONS JPL-486	B64-10226	01-01	METAL STRIP FORMS 21 FOOT BOOM, ROLLS UP FOR COMPACT STORAGE GSFC-151	B64-10011	01-05
TRANSISTORIZED CONVERTER PROVIDES NONDISSIPATIVE REGULATION GSFC-238	B64-10305	01-01	TUBING SLEEVE AND CUTTER SIMPLIFY DISCONNECTING WELDED JOINT IN TUBING JPL-384	B63-10240	01-05
TRANSISTOR AMPLIFIER NEW LOW-LEVEL A-C AMPLIFIER PROVIDES ADJUSTABLE NOISE CANCELLATION AND AUTOMATIC TEMPERATURE COMPENSATION ARC-2	B63-10003	01-04	HELICAL TUBE SEPARATES NITROGEN GAS FROM LIQUID NITROGEN JPL-398	B63-10251	01-05
TRANSISTOR CIRCUIT IGNITING SYSTEM FOR MERCURY VAPOR LAMPS PROTECTS TRANSISTORIZED SUSTAINING SUPPLY JPL-421	B63-10262	01-01	SPECIAL PLIERS CONNECT HOSE CONTAINING LIQUID UNDER PRESSURE JPL-IT-1003	B63-10291	01-05
TWO-STAGE EMITTER FOLLOWER IS TEMPERATURE STABILIZED MSC-20	B63-10493	01-01	CONNECTOR FOR VACUUM-JACKETED LINES CUTS TUBING SYSTEM COST LEWIS-66	B63-10367	01-05
TRANSISTORIZED TRIGGER CIRCUIT IS FREQUENCY-CONTROLLABLE GSFC-111	B63-10553	01-01	COMPOSITE, VACUUM-JACKETED TUBING REPLACES BELLOWS IN CRYOGENIC SYSTEMS LEWIS-67	B63-10368	01-05
HIGHLY EFFICIENT SQUARE-WAVE OSCILLATOR OPERATOR AT HIGH POWER LEVELS GSFC-112	B63-10554	01-01	TUNGSTEN APPARATUS FACILITATES HIGH-TEMPERATURE TENSILE TESTING IN VACUUM LEWIS-42	B63-10345	01-03
LOW-POWER TRANSISTORIZED CIRCUIT PROVIDES STAIRCASE WAVEFORM GSFC-48	B64-10007	01-01	NOVEL CLAMPS ALIGN LARGE ROCKET CASES, ELIMINATE BACK-UP BARS M-FS-1	B63-10376	01-05
TRANSMISSION LIGHTWEIGHT UNIVERSAL JOINT TRANSMITS BOTH TORQUE AND THRUST JPL-375	B63-10236	01-05	PRESSURE MOLDING OF POWDERED MATERIALS IMPROVED BY RUBBER MOLD INSERT WOO-100	B64-10270	01-03
TRANSMISSION LINE DOUBLE-THROW MICROWAVE DEVICE SWITCHES TWO LINES QUICKLY JPL-410	B63-10258	01-01	TUNNEL DIODE MONOSTABLE CIRCUIT WITH TUNNEL DIODE HAS FAST RECOVERY GSFC-132	B63-10603	01-01
PLASTIC MOLDS REDUCE COST OF ENCAPSULATING ELECTRIC CABLE CONNECTORS M-FS-69	B63-10568	01-05	TURBINE WHEEL BALL BEARING USED IN DESIGN OF RUGGED FLOW-METER LEWIS-159	B64-10170	01-05
HIGH-PASS RF COAXIAL FILTER REJECTS DC AND LOW FREQUENCY SIGNALS					

U

ULTRAHIGH VACUUM
PRECISION GAGE MEASURES ULTRAHIGH VACUUM LEVELS

SUBJECT INDEX

VIDICON

GSFC-114	B63-10597	01-01	JPL-361	B63-10228	01-05
ULTRASONIC AGITATION			DESIGN OF VALVE PERMITS SEALING EVEN IF THE		
HIGH PURITY ELECTROFORMING YIELDS SUPERIOR			STEM IS MISALIGNED		
METAL MODELS			LEWIS-38	B63-10341	01-05
ARC-6	B63-10007	01-05	HIGH-TEMPERATURE, HIGH-PRESSURE SPHERICAL		
ULTRASONIC MACHINING			SEGMENT VALVE PROVIDES QUICK OPENING		
HIGH PURITY ELECTROFORMING YIELDS SUPERIOR			ARC-13	B63-10431	01-05
METAL MODELS			GATE VALVE WITH CERAMIC-COATED BASE OPERATES		
ARC-6	B63-10007	01-05	AT HIGH TEMPERATURES		
ULTRAVIOLET LIGHT			ARC-23	B63-10562	01-03
OIL-SMEARED MODELS AID WIND TUNNEL			MULTIPLE PORT PRESSURE SCANNER VALVE FEATURES		
MEASUREMENTS			GREATER ACCURACY, QUICKER DATA		
LANGLEY-4	B63-10311	01-03	JPL-555	B64-10031	01-05
V					
VACUUM			BLADE VALVE ISOLATES COMPARTMENT IN PIPE,		
NEW COBALT ALLOYS HAVE HIGH-TEMPERATURE			OPENS TO ALLOW FREE FLOW		
STRENGTH AND LONG LIFE IN VACUUM ENVIRONMENTS			JPL-585	B64-10188	01-05
LEWIS-47	B63-10351	01-03	TWO-PART VALVE ACTS AS QUICK COUPLING		
CONNECTOR SEALS FLUID LINES AT CRYOGENIC			JPL-478	B64-10223	01-05
TEMPERATURES AND HIGH VACUUMS			VAPOR DEPOSITION		
GSFC-253	B64-10327	01-05	ECONOMICAL FABRICATION PROCESS PRODUCES HIGH-		
VACUUM CHAMBER			QUALITY JUNCTION TRANSISTORS		
CRYOPUMPING OF HYDROGEN IN VACUUM CHAMBERS IS			JPL-SC-065	B64-10330	01-01
AIDED BY CATALYTIC OXIDATION OF HYDROGEN			VARIATION METHOD		
LEWIS-15	B63-10340	01-05	TRANSISTORIZED TRIGGER CIRCUIT IS FREQUENCY-		
APPARATUS FACILITATES HIGH-TEMPERATURE TENSILE			CONTROLLABLE		
TESTING IN VACUUM			GSFC-111	B63-10553	01-01
LEWIS-42	B63-10345	01-03	VEITCH DIAGRAM		
MODIFIED RF COAXIAL CONNECTOR ENDS VACUUM			VEITCH DIAGRAM PLOTTER SIMPLIFIES BOOLEAN		
CHAMBER WIRING PROBLEM			FUNCTIONS		
GSFC-150	B64-10010	01-01	JPL-385	B63-10241	01-05
VACUUM DEPOSITION			VELOCITY		
VACUUM FORMING OF THERMOPLASTIC SHEET RESULTS			LOW-COST TAPE SYSTEM MEASURES VELOCITY OF		
IN LOW-COST INVESTMENT CASTING PATTERNS			ACCELERATION		
ARC-7	B63-10008	01-05	GSFC-85	B63-10512	01-01
VACUUM EQUIPMENT			VELOCITY MEASUREMENT		
CONNECTOR FOR VACUUM-JACKETED LINES CUTS			LOW-COST TAPE SYSTEM MEASURES VELOCITY OF		
TUBING SYSTEM COST			ACCELERATION		
LEWIS-66	B63-10367	01-05	GSFC-85	B63-10512	01-01
VACUUM FURNACE			VENT		
RADIANT HEATER FOR VACUUM FURNACES OFFERS HIGH			VENTED PISTON SEAL PREVENTS FLUID LEAKAGE		
STRUCTURAL RIGIDITY, LOW HEAT LOSS			BETWEEN TWO CHAMBERS		
LEWIS-39	B63-10342	01-01	JPL-179	B63-10141	01-05
NEW COBALT ALLOYS HAVE HIGH-TEMPERATURE			VESSEL		
STRENGTH AND LONG LIFE IN VACUUM ENVIRONMENTS			METHOD OF WELDING JOINT IN CLOSED VESSEL		
LEWIS-47	B63-10351	01-03	IMPROVES QUALITY OF SEAM		
VACUUM MELTING			JPL-170	B63-10139	01-05
VACUUM FORMING OF THERMOPLASTIC SHEET RESULTS			VIBRATION ABSORBER		
IN LOW-COST INVESTMENT CASTING PATTERNS			THERMALLY CONDUCTIVE METAL WOOL-SILICONE		
ARC-7	B63-10008	01-05	RUBBER MATERIAL CAN BE USED AS SHOCK AND		
VACUUM PUMP			VIBRATION DAMPER		
FINE-PARTICLE FILTER PREVENTS DAMAGE TO VACUUM			JPL-321	B63-10207	01-03
PUMPS			VIBRATION DAMPING		
LEWIS-106	B63-10489	01-05	THERMALLY CONDUCTIVE METAL WOOL-SILICONE		
VACUUM TUBE			RUBBER MATERIAL CAN BE USED AS SHOCK AND		
COMPOSITE, VACUUM-JACKETED TUBING REPLACES			VIBRATION DAMPER		
BELLOWS IN CRYOGENIC SYSTEMS			JPL-321	B63-10207	01-03
LEWIS-67	B63-10368	01-05	FRICTIONAL WEDGE SHOCK MOUNT IS INEXPENSIVE,		
CESIUM IODIDE CRYSTALS FUSED TO VACUUM TUBE			HAS GOOD DAMPING CHARACTERISTICS		
FACEPLATES			JPL-IT-1001	B63-10289	01-05
GSFC-67	B63-10476	01-03	VIBRATION MEASURING APPARATUS		
EMISSION TESTER FOR HIGH-POWER VACUUM TUBES			DEVICE CALIBRATES VIBRATION TRANSDUCERS AT		
JPL-628	B64-10158	01-01	AMPLITUDES UP TO 20G.		
VALVE			M-FS-86	B63-10572	01-01
HIGH-PRESSURE REGULATING SYSTEM PREVENTS			VIDICON		
PRESSURE SURGES			RASTER LINEARITY OF VIDEO CAMERAS CALIBRATED		
JPL-231	B63-10170	01-05	WITH PRECISION TESTER		
PACKLESS VALVE WITH ALL-METAL SEAL HANDLES			GSFC-200	B64-10209	01-01
WIDE TEMPERATURE, PRESSURE RANGE			TEMPERATURE-COMPENSATION CIRCUIT STABILIZES		
			PERFORMANCE OF VIDICONS		
			JPL-486	B64-10226	01-01

VISCOUS DAMPING

SUBJECT INDEX

VISCOUS DAMPING

VISCOUS-PENDULUM DAMPER SUPPRESSES STRUCTURAL VIBRATIONS
 LANGLEY-45 864-10272 01-05

VISUAL DISPLAY

DIGITAL CARDIOMETER COMPUTES AND DISPLAYS HEARTBEAT RATE
 MSC-93 864-10258 01-01

PNEUMOTACHOMETER COUNTS RESPIRATION RATE OF HUMAN SUBJECT
 MSC-92 864-10259 01-01

VISUAL OBSERVATION

USE OF PHOTOGRAPHS SPEEDS INSPECTION OF PRINTED-CIRCUIT BOARDS
 MSC-72 864-10118 01-01

VOLATILITY

NEW COBALT ALLOYS HAVE HIGH-TEMPERATURE STRENGTH AND LONG LIFE IN VACUUM ENVIRONMENTS
 LEWIS-47 863-10351 01-03

VOLTAGE

IGNITING SYSTEM FOR MERCURY VAPOR LAMPS PROTECTS TRANSISTORIZED SUSTAINING SUPPLY
 JPL-421 863-10262 01-01

TWO-STAGE EMITTER FOLLOWER IS TEMPERATURE STABILIZED
 MSC-20 863-10493 01-01

SIMPLE CIRCUIT PROVIDES ADJUSTABLE VOLTAGE WITH LINEAR TEMPERATURE VARIATION
 JPL-W00-029 863-10537 01-01

TRANSISTORIZED TRIGGER CIRCUIT IS FREQUENCY-CONTROLLABLE
 GSFC-111 863-10553 01-01

LIQUID SWITCH IS REMOTELY OPERATED BY LOW DC VOLTAGE
 GSFC-119 863-10599 01-01

TEMPERATURE-SENSITIVE NETWORK DRIVES ASTABLE MULTIVIBRATOR
 GSFC-137 863-10609 01-01

EFFICIENT CIRCUIT TRIGGERS HIGH-CURRENT, HIGH-VOLTAGE PULSES
 MSC-14 864-10024 01-01

AUXILIARY SILVER ELECTRODE ELIMINATES TWO-STEP VOLTAGE DISCHARGE CHARACTERISTIC OF SILVER-ZINC CELLS
 GSFC-169 864-10114 01-01

VOLTAGE GENERATOR SWEEPS OSCILLATOR FREQUENCY LINEARLY WITH TIME
 M-FS-219 864-10320 01-01

BANDWIDTH SWITCHING IS TRANSIENT-FREE, AVOIDS LOSS OF LOOP LOCK
 W00-054 864-10349 01-01

VOLTAGE REGULATOR

FIELD EFFECT TRANSISTORS USED AS VOLTAGE-CONTROLLED RESISTORS
 M-FS-174 864-10163 01-01

TRANSISTORIZED CONVERTER PROVIDES NONDISSIPATIVE REGULATION
 GSFC-238 864-10305 01-01

W

WALL

DEVICE TRANSMITS ROTARY MOTION THROUGH HERMETICALLY SEALED WALL
 JPL-303 863-10198 01-05

SHAPED SUPERCONDUCTOR CYLINDER RETAINS INTENSE MAGNETIC FIELD
 JPL-381 863-10238 01-01

TEST DEVICE PREVENTS MOLECULAR BOUNCE-BACK
 GSFC-82 863-10546 01-03

WALL TEMPERATURE DISTRIBUTION

VARIABLE-TRANSPARENCY WALL REGULATES TEMPERATURES OF STRUCTURES
 LANGLEY-25 863-10528 01-03

WASHER

NEW PACKAGE FOR BELLEVILLE SPRING PERMITS RATE CHANGE, EASY DISASSEMBLY
 JPL-392 863-10247 01-05

WAVE ATTENUATION

MODIFIED FILTER PREVENTS CONDUCTION OF MICRO-WAVE SIGNALS ALONG HIGH-VOLTAGE POWER SUPPLY LEADS
 JPL-63 863-10091 01-01

WAVE INCIDENCE CONTROL

REFERENCE BLACK BODY IS COMPACT, CONVENIENT TO USE
 ARC-3 863-10004 01-03

WAVEFORM

LOW-POWER TRANSISTORIZED CIRCUIT PROVIDES STAIRCASE WAVEFORM
 GSFC-48 864-10007 01-01

IMPROVED ELECTRODE GIVES HIGH-QUALITY BIOLOGICAL RECORDINGS
 MSC-17 864-10025 01-04

ANALOG DEVICE SIMULATES PHYSIOLOGICAL WAVEFORMS
 MSC-51 864-10109 01-01

WAVEGUIDE

CRYOGENIC WAVEGUIDE WINDOW IS SEALED WITH PLASTIC FOAM
 JPL-559 863-10613 01-01

WEB

NOVEL SHOCK ABSORBER FEATURES VARYING YIELD STRENGTHS
 MSC-63A 864-10138 01-03

WEDGE

FRICTIONAL WEDGE SHOCK MOUNT IS INEXPENSIVE, HAS GOOD DAMPING CHARACTERISTICS
 JPL-IT-1001 863-10289 01-05

WELDED JOINT

METHOD OF WELDING JOINT IN CLOSED VESSEL IMPROVES QUALITY OF SEAM
 JPL-170 863-10139 01-05

SLEEVE AND CUTTER SIMPLIFY DISCONNECTING WELDED JOINT IN TUBING
 JPL-384 863-10240 01-05

WELDED STRUCTURE

VACUUM-TYPE BACKUP BAR SPEEDS WELD REPAIRS
 M-FS-12 863-10384 01-05

COMPACT COAXIAL CONNECTOR FOR PRINTED CIRCUIT ADDS RELIABILITY
 MSC-57 864-10016 01-01

INSULATED WELD TOOLING PERMITS UNIFORM, HIGH-QUALITY WELD
 MSC-42 864-10058 01-05

UPSETTING BUTT EDGE INCREASES WELD-JOINT STRENGTH
 M-FS-175 864-10164 01-05

WELDING

METHOD OF WELDING JOINT IN CLOSED VESSEL IMPROVES QUALITY OF SEAM
 JPL-170 863-10139 01-05

SLEEVE AND CUTTER SIMPLIFY DISCONNECTING WELDED JOINT IN TUBING
 JPL-384 863-10240 01-05

NOVEL CLAMPS ALIGN LARGE ROCKET CASES, ELIMINATE BACK-UP BARS
 M-FS-1 863-10376 01-05

COMPACT COAXIAL CONNECTOR FOR PRINTED CIRCUIT ADDS RELIABILITY

SUBJECT INDEX

ZINC

MSC-57 B64-10016 01-01

WELDING PROCEDURE IMPROVES QUALITY OF WELDS,
OFFERS OTHER ADVANTAGES
M-FS-32 B64-10309 01-01

WIND PROFILE
NEW ANEMOMETER HAS FAST RESPONSE, MEASURES
DYNAMIC PRESSURE DIRECTLY
LANGLEY-28 B63-10530 01-05

WIND TUNNEL
FLEXIBLE FASTENER ALLOWS THERMAL EXPANSION
LANGLEY-40 B64-10145 01-05

WIND TUNNEL MODEL
OIL-SMEARED MODELS AID WIND TUNNEL
MEASUREMENTS
LANGLEY-4 B63-10311 01-03

WELDED PRESSURE TRANSDUCER MADE AS SMALL AS
1/8TH-INCH IN DIAMETER
ARC-11 B63-10429 01-03

FLEXIBLE FASTENER ALLOWS THERMAL EXPANSION
LANGLEY-40 B64-10145 01-05

WINDOW
CRYOGENIC WAVEGUIDE WINDOW IS SEALED WITH
PLASTIC FOAM
JPL-559 B63-10613 01-01

WIRE
COOLING METHOD PROLONGS LIFE OF HOT-WIRE
TRANSDUCER
LEWIS-41 B63-10344 01-02

CONNECTOR FOR THERMOCOUPLE LEADS SAVES COSTLY
WIRE, MAKES RELIABLE CONNECTORS
LANGLEY-26 B63-10529 01-01

WIRING SYSTEM
MODIFIED RF COAXIAL CONNECTOR ENDS VACUUM
CHAMBER WIRING PROBLEM
GSFC-150 B64-10010 01-01

Z

ZENER DIODE
TEMPERATURE-SENSITIVE NETWORK DRIVES ASTABLE
MULTIVIBRATOR
GSFC-137 B63-10609 01-01

ZINC
NEW METHOD USED TO FABRICATE GALLIUM ARSENIDE
PHOTOVOLTAIC DEVICE
WOO-062 B64-10019 01-01

ORIGINATOR/TECH BRIEF NUMBER INDEX

Index to Tech Briefs

Issue 1

Originator/Tech Brief Number Index

The left hand column gives the originator number; to the right of each originator number is the Tech Brief number (e.g., B63-10023) followed by a four digit number (e.g. 01-05) for locating the citation and abstract in the first section. The first two digits identify this as the first issue of the *Index to NASA Tech Briefs*, and the two digits following the hyphen identify the subject category.

ARC-2	.....	B63-10003	01-04	GSFC-168	.....	B64-10113	01-03
ARC-3	.....	B63-10004	01-03	GSFC-169	.....	B64-10114	01-01
ARC-5	.....	B63-10006	01-01	GSFC-187	.....	B64-10150	01-01
ARC-6	.....	B63-10007	01-05	GSFC-188	.....	B64-10151	01-03
ARC-7	.....	B63-10008	01-05	GSFC-190	.....	B64-10200	01-01
ARC-8	.....	B63-10009	01-05	GSFC-200	.....	B64-10209	01-01
ARC-11	.....	B63-10429	01-03	GSFC-206	.....	B64-10211	01-05
ARC-13	.....	B63-10431	01-05	GSFC-234	.....	B64-10277	01-05
ARC-17	.....	B63-10435	01-05	GSFC-236	.....	B64-10281	01-01
ARC-20	.....	B63-10560	01-05	GSFC-238	.....	B64-10305	01-01
ARC-22	.....	B63-10561	01-01	GSFC-251	.....	B64-10299	01-01
ARC-23	.....	B63-10562	01-03	GSFC-253	.....	B64-10327	01-05
ARC-25	.....	B63-10564	01-05				
ARC-26	.....	B64-10004	01-01	JPL-0021	.....	B63-10280	01-01
ARC-28	.....	B64-10068	01-03	JPL-0029	.....	B63-10284	01-01
ARC-29	.....	B64-10069	01-05	JPL-0036	.....	B64-10306	01-05
ARC-36	.....	B64-10143	01-01	JPL-63	.....	B63-10091	01-01
ARC-39	.....	B64-10171	01-01	JPL-122	.....	B63-10118	01-01
				JPL-135	.....	B63-10123	01-05
FRC-16	.....	B63-10023	01-05	JPL-170	.....	B63-10139	01-05
FRC-17	.....	B63-10024	01-01	JPL-179	.....	B63-10141	01-05
				JPL-182	.....	B63-10143	01-05
GSFC-36	.....	B63-10027	01-01	JPL-231	.....	B63-10170	01-05
GSFC-42	.....	B63-10033	01-01	JPL-236A	.....	B63-10174	01-01
GSFC-48	.....	B64-10007	01-01	JPL-288	.....	B63-10193	01-01
GSFC-59	.....	B64-10121	01-05	JPL-303	.....	B63-10198	01-05
GSFC-67	.....	B63-10476	01-03	JPL-305	.....	B63-10200	01-05
GSFC-73	.....	B64-10173	01-01	JPL-321	.....	B63-10207	01-03
GSFC-80	.....	B63-10511	01-01	JPL-354	.....	B63-10226	01-05
GSFC-82	.....	B63-10546	01-03	JPL-357	.....	B63-10227	01-01
GSFC-85	.....	B63-10512	01-01	JPL-358	.....	B64-10080	01-01
GSFC-91	.....	B63-10536	01-01	JPL-361	.....	B63-10228	01-05
GSFC-92	.....	B63-10547	01-05	JPL-362	.....	B63-10229	01-01
GSFC-93	.....	B63-10596	01-01	JPL-373	.....	B63-10234	01-03
GSFC-100	.....	B63-10551	01-01	JPL-374	.....	B63-10235	01-03
GSFC-101	.....	B64-10144	01-01	JPL-375	.....	B63-10236	01-05
GSFC-111	.....	B63-10553	01-01	JPL-376	.....	B63-10237	01-05
GSFC-112	.....	B63-10554	01-01	JPL-381	.....	B63-10238	01-01
GSFC-113	.....	B63-10555	01-01	JPL-384	.....	B63-10240	01-05
GSFC-114	.....	B63-10597	01-01	JPL-385	.....	B63-10241	01-05
GSFC-115	.....	B63-10556	01-05	JPL-392	.....	B63-10247	01-05
GSFC-119	.....	B63-10599	01-01	JPL-397	.....	B63-10250	01-01
GSFC-120	.....	B63-10600	01-01	JPL-398	.....	B63-10251	01-05
GSFC-129	.....	B63-10606	01-01	JPL-406	.....	B63-10255	01-01
GSFC-132	.....	B63-10603	01-01	JPL-410	.....	B63-10258	01-01
GSFC-137	.....	B63-10609	01-01	JPL-418	.....	B63-10260	01-02
GSFC-143	.....	B64-10028	01-05	JPL-421	.....	B63-10262	01-01
GSFC-150	.....	B64-10010	01-01	JPL-424	.....	B63-10263	01-03
GSFC-151	.....	B64-10011	01-05	JPL-425	.....	B63-10264	01-01
GSFC-161	.....	B64-10142	01-03	JPL-447	.....	B64-10002	01-01
				JPL-466	.....	B64-10122	01-01
				JPL-472	.....	B64-10222	01-01
				JPL-478	.....	B64-10223	01-05
				JPL-484	.....	B64-10066	01-05
				JPL-486	.....	B64-10226	01-01
				JPL-499	.....	B64-10124	01-05
				JPL-504	.....	B64-10280	01-01
				JPL-513	.....	B63-10514	01-01
				JPL-544	.....	B63-10612	01-03
				JPL-545	.....	B63-10517	01-05
				JPL-555	.....	B64-10031	01-05
				JPL-559	.....	B63-10613	01-01
				JPL-584	.....	B64-10084	01-05
				JPL-585	.....	B64-10188	01-05
				JPL-596	.....	B64-10065	01-01
				JPL-604	.....	B64-10178	01-05
				JPL-611	.....	B64-10206	01-03
				JPL-628	.....	B64-10158	01-01
				JPL-IT-1001	.....	B63-10289	01-05
				JPL-IT-1003	.....	B63-10291	01-05
				JPL-IT-1004	.....	B63-10292	01-05
				JPL-SC-065	.....	B64-10330	01-01

ORIGINATOR NUMBER INDEX

JPL-W00-008	.....	B63-10424	01-03
JPL-W00-029	.....	B63-10537	01-01
LANGLEY-1A	.....	B63-10304	01-05
LANGLEY-4	.....	B63-10311	01-03
LANGLEY-6A	.....	B63-10318	01-03
LANGLEY-10	.....	B63-10321	01-01
LANGLEY-16	.....	B63-10557	01-03
LANGLEY-20	.....	B63-10558	01-05
LANGLEY-21	.....	B64-10119	01-05
LANGLEY-23	.....	B63-10526	01-05
LANGLEY-25	.....	B63-10528	01-03
LANGLEY-26	.....	B63-10529	01-01
LANGLEY-27	.....	B64-10130	01-05
LANGLEY-28	.....	B63-10530	01-05
LANGLEY-31	.....	B64-10237	01-01
LANGLEY-40	.....	B64-10145	01-05
LANGLEY-44	.....	B64-10146	01-04
LANGLEY-45	.....	B64-10272	01-05
LEWIS-12	.....	B63-10337	01-03
LEWIS-13	.....	B63-10338	01-01
LEWIS-15	.....	B63-10340	01-05
LEWIS-37	.....	B64-10042	01-01
LEWIS-38	.....	B63-10341	01-05
LEWIS-39	.....	B63-10342	01-01
LEWIS-41	.....	B63-10344	01-02
LEWIS-42	.....	B63-10345	01-03
LEWIS-43	.....	B63-10346	01-02
LEWIS-47	.....	B63-10351	01-03
LEWIS-50	.....	B63-10354	01-05
LEWIS-64	.....	B63-10365	01-03
LEWIS-66	.....	B63-10367	01-05
LEWIS-67	.....	B63-10368	01-05
LEWIS-73	.....	B63-10440	01-01
LEWIS-75	.....	B63-10442	01-05
LEWIS-76	.....	B63-10443	01-01
LEWIS-99	.....	B64-10348	01-05
LEWIS-106	.....	B63-10489	01-05
LEWIS-144	.....	B64-10116	01-03
LEWIS-152	.....	B64-10014	01-05
LEWIS-159	.....	B64-10170	01-05
M-FS-1	.....	B63-10376	01-05
M-FS-3	.....	B63-10378	01-03
M-FS-12	.....	B63-10384	01-05
M-FS-13	.....	B63-10385	01-05
M-FS-15	.....	B63-10387	01-05
M-FS-17	.....	B63-10389	01-03
M-FS-32	.....	B64-10309	01-01
M-FS-54	.....	B63-10453	01-03
M-FS-61	.....	B63-10567	01-01
M-FS-64	.....	B63-10479	01-03
M-FS-67	.....	B63-10481	01-03
M-FS-69	.....	B63-10568	01-05
M-FS-84	.....	B63-10571	01-05
M-FS-86	.....	B63-10572	01-01
M-FS-91	.....	B63-10497	01-05
M-FS-98	.....	B63-10502	01-05
M-FS-122	.....	B63-10590	01-05
M-FS-123	.....	B63-10579	01-01
M-FS-145	.....	B64-10050	01-05
M-FS-160	.....	B64-10099	01-03
M-FS-174	.....	B64-10163	01-01
M-FS-175	.....	B64-10164	01-05
M-FS-190	.....	B64-10249	01-05
M-FS-197	.....	B64-10283	01-01
M-FS-219	.....	B64-10320	01-01
MSC-4A	.....	B64-10001	01-05
MSC-8	.....	B64-10141	01-05
MSC-14	.....	B64-10024	01-01
MSC-17	.....	B64-10025	01-04
MSC-20	.....	B63-10493	01-01
MSC-24	.....	B63-10519	01-05
MSC-42	.....	B64-10058	01-05
MSC-46	.....	B64-10185	01-05
MSC-50	.....	B64-10108	01-04
MSC-51	.....	B64-10109	01-01
MSC-53	.....	B64-10015	01-05
MSC-57	.....	B64-10016	01-01
MSC-58	.....	B64-10017	01-01
MSC-63A	.....	B64-10138	01-03
MSC-64	.....	B64-10064	01-01
MSC-72	.....	B64-10118	01-01
MSC-85	.....	B64-10166	01-03
MSC-89	.....	B64-10255	01-01

MSC-92	.....	B64-10259	01-01
MSC-93	.....	B64-10258	01-01
MSC-118	.....	B64-10319	01-03
W00-4	.....	B63-10420	01-05
W00-5	.....	B63-10421	01-02
W00-041	.....	B64-10278	01-05
W00-048	.....	B64-10284	01-05
W00-054	.....	B64-10349	01-01
W00-055	.....	B63-10508	01-01
W00-062	.....	B64-10019	01-01
W00-065	.....	B64-10021	01-05
W00-100	.....	B64-10270	01-03
W00-101	.....	B64-10271	01-01
W00-104	.....	B64-10282	01-03
WS-4	.....	B64-10006	01-05

TECH BRIEF/ORIGINATOR NUMBER INDEX

Index to Tech Briefs

Issue 1

Tech Brief/Originator Number Index

The left hand column gives the Tech Brief number (e.g. B63-10023) followed by a four digit number (e.g. 01-05) for locating the citation and abstract in the first section. The first two digits identify this as the first issue of the *Index to NASA Tech Briefs*, and the two digits following the hyphen identify the subject category. The right hand column gives the originator number.

B63-10003	01-04	ARC-2
B63-10004	01-03	ARC-3
B63-10006	01-01	ARC-5
B63-10007	01-05	ARC-6
B63-10009	01-05	ARC-7
B63-10009	01-05	ARC-8
B63-10023	01-05	FRC-16
B63-10024	01-01	FRC-17
B63-10027	01-01	GSFC-36
B63-10033	01-01	GSFC-42
B63-10091	01-01	JPL-63
B63-10118	01-01	JPL-122
B63-10123	01-05	JPL-135
B63-10139	01-05	JPL-170
B63-10141	01-05	JPL-179
B63-10143	01-05	JPL-182
B63-10170	01-05	JPL-231
B63-10174	01-01	JPL-236A
B63-10193	01-01	JPL-288
B63-10198	01-05	JPL-303
B63-10200	01-05	JPL-305
B63-10207	01-03	JPL-321
B63-10226	01-05	JPL-354
B63-10227	01-01	JPL-357
B63-10228	01-05	JPL-361
B63-10229	01-01	JPL-362
B63-10234	01-03	JPL-373
B63-10235	01-03	JPL-374
B63-10236	01-05	JPL-375
B63-10237	01-05	JPL-376
B63-10238	01-01	JPL-381
B63-10240	01-05	JPL-384
B63-10241	01-05	JPL-385
B63-10247	01-05	JPL-392
B63-10250	01-01	JPL-397
B63-10251	01-05	JPL-398
B63-10255	01-01	JPL-406
B63-10258	01-01	JPL-410
B63-10260	01-02	JPL-418
B63-10262	01-01	JPL-421
B63-10263	01-03	JPL-424
B63-10264	01-01	JPL-425
B63-10280	01-01	JPL-0021
B63-10284	01-01	JPL-0029
B63-10289	01-05	JPL-IT-1001
B63-10291	01-05	JPL-IT-1003
B63-10292	01-05	JPL-IT-1004
B63-10304	01-05	LANGLEY-1A
B63-10311	01-03	LANGLEY-4
B63-10318	01-03	LANGLEY-6A

B63-10321	01-01	LANGLEY-10
B63-10337	01-03	LEWIS-12
B63-10338	01-01	LEWIS-13
B63-10340	01-05	LEWIS-15
B63-10341	01-05	LEWIS-38
B63-10342	01-01	LEWIS-39
B63-10344	01-02	LEWIS-41
B63-10345	01-03	LEWIS-42
B63-10346	01-02	LEWIS-43
B63-10351	01-03	LEWIS-47
B63-10354	01-05	LEWIS-50
B63-10365	01-03	LEWIS-64
B63-10367	01-05	LEWIS-66
B63-10368	01-05	LEWIS-67
B63-10376	01-05	M-FS-1
B63-10378	01-03	M-FS-3
B63-10384	01-05	M-FS-12
B63-10385	01-05	M-FS-13
B63-10387	01-05	M-FS-15
B63-10389	01-03	M-FS-17
B63-10420	01-05	WOO-4
B63-10421	01-02	WOO-5
B63-10424	01-03	JPL-WOO-008
B63-10429	01-03	ARC-11
B63-10431	01-05	ARC-13
B63-10435	01-05	ARC-17
B63-10440	01-01	LEWIS-73
B63-10442	01-05	LEWIS-75
B63-10443	01-01	LEWIS-76
B63-10453	01-03	M-FS-54
B63-10476	01-03	GSFC-67
B63-10479	01-03	M-FS-64
B63-10481	01-03	M-FS-67
B63-10489	01-05	LEWIS-106
B63-10493	01-01	MSC-20
B63-10497	01-05	M-FS-91
B63-10502	01-05	M-FS-98
B63-10508	01-01	WOO-055
B63-10511	01-01	GSFC-80
B63-10512	01-01	GSFC-85
B63-10514	01-01	JPL-513
B63-10517	01-05	JPL-545
B63-10519	01-05	MSC-24
B63-10526	01-05	LANGLEY-23
B63-10528	01-03	LANGLEY-25
B63-10529	01-01	LANGLEY-26
B63-10530	01-05	LANGLEY-28
B63-10536	01-01	GSFC-91
B63-10537	01-01	JPL-WOO-029
B63-10546	01-03	GSFC-82
B63-10547	01-05	GSFC-92
B63-10551	01-01	GSFC-100
B63-10553	01-01	GSFC-111
B63-10554	01-01	GSFC-112
B63-10555	01-01	GSFC-113
B63-10556	01-05	GSFC-115
B63-10557	01-03	LANGLEY-16
B63-10558	01-05	LANGLEY-20
B63-10560	01-05	ARC-20
B63-10561	01-01	ARC-22
B63-10562	01-03	ARC-23
B63-10564	01-05	ARC-25
B63-10567	01-01	M-FS-61
B63-10568	01-05	M-FS-69
B63-10571	01-05	M-FS-84
B63-10572	01-01	M-FS-86
B63-10579	01-01	M-FS-123
B63-10590	01-05	M-FS-122
B63-10596	01-01	GSFC-93
B63-10597	01-01	GSFC-114
B63-10599	01-01	GSFC-119
B63-10600	01-01	GSFC-120
B63-10603	01-01	GSFC-132
B63-10606	01-01	GSFC-129

TECH BRIEF NUMBER INDEX

B63-10609	01-01	GSFC-137	B64-10319	01-03	MSC-118
B63-10612	01-03	JPL-544	B64-10320	01-01	M-FS-219
B63-10613	01-01	JPL-559	B64-10327	01-05	GSFC-253
B64-10001	01-05	MSC-4A	B64-10330	01-01	JPL-SC-065
B64-10002	01-01	JPL-447	B64-10348	01-05	LEWIS-99
B64-10004	01-01	ARC-26	B64-10349	01-01	WOO-054
B64-10006	01-05	WS-4			
B64-10007	01-01	GSFC-48			
B64-10010	01-01	GSFC-150			
B64-10011	01-05	GSFC-151			
B64-10014	01-05	LEWIS-152			
B64-10015	01-05	MSC-53			
B64-10016	01-01	MSC-57			
B64-10017	01-01	MSC-58			
B64-10019	01-01	WOO-062			
B64-10021	01-05	WOO-065			
B64-10024	01-01	MSC-14			
B64-10025	01-04	MSC-17			
B64-10028	01-05	GSFC-143			
B64-10031	01-05	JPL-555			
B64-10042	01-01	LEWIS-37			
B64-10050	01-05	M-FS-145			
B64-10058	01-05	MSC-42			
B64-10064	01-01	MSC-64			
B64-10065	01-01	JPL-596			
B64-10066	01-05	JPL-484			
B64-10068	01-03	ARC-28			
B64-10069	01-05	ARC-29			
B64-10080	01-01	JPL-358			
B64-10084	01-05	JPL-584			
B64-10099	01-03	M-FS-160			
B64-10108	01-04	MSC-50			
B64-10109	01-01	MSC-51			
B64-10113	01-03	GSFC-168			
B64-10114	01-01	GSFC-169			
B64-10116	01-03	LEWIS-144			
B64-10118	01-01	MSC-72			
B64-10119	01-05	LANGLEY-21			
B64-10121	01-05	GSFC-59			
B64-10122	01-01	JPL-466			
B64-10124	01-05	JPL-499			
B64-10130	01-05	LANGLEY-27			
B64-10138	01-03	MSC-63A			
B64-10141	01-05	MSC-8			
B64-10142	01-03	GSFC-161			
B64-10143	01-01	ARC-36			
B64-10144	01-01	GSFC-101			
B64-10145	01-05	LANGLEY-40			
B64-10146	01-04	LANGLEY-44			
B64-10150	01-01	GSFC-187			
B64-10151	01-03	GSFC-188			
B64-10158	01-01	JPL-628			
B64-10163	01-01	M-FS-174			
B64-10164	01-05	M-FS-175			
B64-10166	01-03	MSC-85			
B64-10170	01-05	LEWIS-159			
B64-10171	01-01	ARC-39			
B64-10173	01-01	GSFC-73			
B64-10178	01-05	JPL-604			
B64-10185	01-05	MSC-46			
B64-10188	01-05	JPL-585			
B64-10200	01-01	GSFC-190			
B64-10206	01-03	JPL-611			
B64-10209	01-01	GSFC-200			
B64-10211	01-05	GSFC-206			
B64-10222	01-01	JPL-472			
B64-10223	01-05	JPL-478			
B64-10226	01-01	JPL-486			
B64-10237	01-01	LANGLEY-31			
B64-10249	01-05	M-FS-190			
B64-10255	01-01	MSC-89			
B64-10258	01-01	MSC-93			
B64-10259	01-01	MSC-92			
B64-10270	01-03	WOO-100			
B64-10271	01-01	WOO-101			
B64-10272	01-05	LANGLEY-45			
B64-10274	01-05	WOO-005			
B64-10277	01-05	GSFC-234			
B64-10278	01-05	WOO-041			
B64-10280	01-01	JPL-504			
B64-10281	01-01	GSFC-236			
B64-10282	01-03	WOO-104			
B64-10283	01-01	M-FS-197			
B64-10284	01-05	WOO-048			
B64-10299	01-01	GSFC-251			
B64-10305	01-01	GSFC-238			
B64-10306	01-05	JPL-0036			
B64-10309	01-01	M-FS-32			